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JOURNAL OF PSYCHO-ASTHENICS

Devoted to the
Care, Training and Treatment of the Feeble-
Minded and of the Epileptic.

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JOURNAL OF PSYCHO-ASTHENICS

VOL. V.

SEPTEMBER, 1900.

No. 1.

ORIGINAL ARTICLES

PHYSICAL ANOMALIES OF THE FEEBLE-MINDED.

BY A. W. WILMARTH, M. D., CHIPPEWA FALLS, WIS.

In this brief paper I do not intend to attempt to fully describe all the physical defects of the feeble-minded, nor do I claim to present much which is new. I have, however, tried to collect and briefly describe the principal physical peculiarities which I have frequently found in this class trusting such a compilation might be of some value for reference at least.

Beginning with the skull, the characteristics of the microcephalic and megacephalic are well known to you, as well as the bulging head of the hydrocephalic. They are all sure indices of the condition of the brain within. I have long ceased to ascribe much value to irregularities in the general shape of the skull, knowing how easily the soft brain can adapt its shape without injury, but there are two conditions which may be worth remarking. One is where lesion has destroyed a considerable portion of the brain very early in life. In such cases a marked flattening may be sometimes found over the seat of the destroyed tissue, as if that portion of the skull had failed to feel the stimulating pressure of the growing brain below and had checked its own growth prematurely.

Again, it is the rule rather than the exception to find in congenital cases a constriction or narrowing of the base of the skull especially under the frontal lobes where the frontal plates encroach on the olfactory grooves, converting them sometimes into a more or less complete

canal. This peculiarity was called to my attention several years ago by the late Dr. Kerlin and has been verified many times since. Its significance I cannot explain.

In connection with this might be noted the low and narrow frontal region which is not infrequently seen in some of our children especially those whose hereditary rights do not include much intelligence.

Lack of development may occur in certain limbs. I present with this (Plate 1) a picture of the hand of one of the inmates of the Wisconsin Home where the fingers are mere rudiments. This is an extreme case.

In regard to the comparative height and weight of feeble-minded children, as compared with normal children in the the same locality, Dr. Tarbell states that the feeble-minded in the South Boston school, during their period of growth were two inches shorter and nine pounds lighter, on an average, than school children of the same age, results which agreed with Dr Shuttleworth's observations.

Talipes, while by no means characteristic of imbeciles, is far more frequently found than in normal children.

Anatomical deficiencies in the brain itself are naturally frequent. I have dwelt to some length on these in former papers but might briefly state here that the most common are lack of certain surface regions, or we might say, of certain function centers, and the absence of commissures. I have called your attention to the fact that one of the latest centers to become active, (that of articulate speech,) is the most liable to fail in its growth.

In regard to the vascular system in the feeble-minded, I have been occasionally struck, in attempting the injection of the arteries, by their small size, and am confident that this anomaly occurs quite frequently.

Another somewhat unusual case came to my notice a few years ago in an imbecile boy of high grade. He died suddenly and unexpectedly during an apparently trifling illness from the formation of an ante-mortem clot in the heart. His heart, on removal, weighed only two ounces. The peculiarities of the vascular system in Mongolian idiocy have been already referred to. I am confident that a close examination of the physical organization of the imbecile, especially from degenerate families, would reveal frequent deviations from the normal type in



Plate 1.

Excessive growth of Scalp after Cessation of Bone growth.



Plate 2.

Hand, with Rudimentary Fingers.

other organs than the brain. Such studies might be fruitful in suggestion in the furtherance of our work.

Sometimes growth of the scalp after cessation of the growth of the skull throws it into curious ridges. I present with this (Plate 1), a picture of such a case. I have only seen it three times so have concluded it is somewhat rare.

The shape of the palate is a subject to which much study has been devoted. Dr. Channing, in an article published in the *Journal of Mental Science* for January, 1897, has given a masterly analysis of this subject. I have placed especial value on his work as I was witness to the thoroughness with which his study was made.

His conclusions are as follows: "Two-fifths of the palates of idiots are of fairly good shape. Palates of normal people may be deformed. In the idiots it is a difference in degree, not in kind. In either case it shows irregular development anatomically. Palates of average children and idiots under eight years of age probably do not, in the majority of cases, markedly differ. There is no form of palate peculiar to idiocy. The statement that a V shape or other variety of palate is a stigma of degeneracy remains to be proven."

Indeed, it has already been difficult for me to understand why the shape of the palate should have a greater influence on the operation of the brain than the shape of the nose should.

The facial peculiarities of the Mongolian imbeciles are characteristic. So, also, are the stubby fingers, the flat occiput and the fissured tongue.

Some years ago I pointed out that the lower brain (*pons and medulla*) in these children was uniformly small in the cases I had examined; that this portion of the brain was probably most deeply concerned in the control of growth and nutrition; that these children were almost always the offspring of parents, one or both of whom were in poor health at the time of the conception, and my opinion has only been strengthened by continued study of this subject that their condition is only the physical expression of inherited physical degeneration expressed by general defective development of the centers concerned in organic life.

BORDERLINE BETWEEN SANITY AND INSANITY.*

BY H. F. MCDOWELL, M. D., POLK, PA.

The subject of this paper has been suggested by a number of queries that arise from time to time. To what extent criminal acts are the result of mental aberration; the degree of discernment and conscious responsibility of a patient, and how responsibility may be fixed and determined. These, and many other questions, naturally arise in dealing with the mentally deficient insane.

It is not with a view of answering these questions, but rather with the idea of suggesting them for discussion that we have ventured to write.

As we approach the borderline between sanity and insanity, we enter a realm where landmarks are indistinct; where daylight fades into night without any appreciable mark of distinction; where colors merge and run together; where lights and shadows intermingle. A land where none may say day ends here and night begins there. In this region we are asked to draw a line of distinction.

For the majority, their habitation is sufficiently fixed to place them definitely in either class, but a small minority dwelling near the borderline that separates daylight from darkness, furnishes the difficulty. And yet, if we consider the whole field of degeneracy, we must admit that the number who approach this dividing line is not inconsiderable. A pessimistic view leads us to believe that the number of well-balanced minds is not great. If we are all tainted with degeneracy we are in a pitiable condition. But by what standard are we to measure? If we make it idealistic, then we fall far behind. If we demand as high a standard as our ideal moral standard, then we are sadly lacking. Though few approach the divine example in the spiritual things, nevertheless, this is a pretty fair world. Though few reach perfect physical development, yet most of us manage to do fairly well despite our aches and pains. Though few may boast of stable equilibrium, yet most of us get along with a minimum amount of evil towards our neighbor and accomplish a reasonable amount of good.

The average intelligence has not reached that attainment it is capable of developing. Notwithstanding our boast of widespread instruction in public schools and elsewhere, ignorance is abundant while dullness and stupidity are much in evidence. We cannot, therefore, set

*Read before the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons, Polk, Pa., May, 1900.

our standard so high that it will be above the common level, nor can we create an ideal condition and class all who do not reach it as degenerates.

This thing we call mind wanders over trackless areas and has no boundaries. Time and space offer no barriers. Nothing is too high or too low to stop its flight. Yet we can control it,—can confine it to certain channels—can direct its course. We pull ourselves together only to dart off at a tangent as soon as will-power is released, and the best often find themselves tuning over all sorts of imaginary and impossible schemes. What a humiliating picture if one's thoughts could be photographed. What a conglomerate and idiotic mass of things we each put through the machinery of the brain—babblings, fancies, imaginary wrongs and troubles, dreams of impossibilities, speculations on a vast number of unsolvable questions, and what not. When we consider, then, the wanderings of a sane mind and how near we may approach insanity, and even take short excursions into that land, is it surprising that many lose their way and are hopelessly lost in the darkness?

Suppose, then, we start life with a sane mind and allow our thoughts to wander and grovel in morbid imaginations and unwholesome fancies until we lose control, is there not some responsibility connected with our loss of reason? Is there a tide in the affairs of our mental condition, which, if taken at the flood leads on to fortune; omitted, all the voyage of life is bound in shallows and in misery?

In casting about for a mark that will fix the mental habitation of the few, we are confronted by a great many problems and cannot be accurate on such debatable ground. Where mental attainment is so diverse, and where mental equilibrium is so unstable, it must be difficult to strike a balance. Each, in his way, may be important, though his way may sometimes be peculiar. In matters which at best are but relative, opinions may err. Our friend who rides a hobby and is considered peculiar, may be nearer an ideal condition than we. "All are peculiar, may be nearer an ideal condition than we. "All are peculiar except thee and me, and thee is a little peculiar."

If, then, we are driven to the conclusion that inferior mental development is wide-spread, and but a small percentage can be cared for in institutions, it would seem but just that those who are selected should

have some other mark of distinction aside from mere dullness to warrant their being taken from a class that is numerically great.

We all know a few cases where there is some doubt about their retention in an institution, a small number whose mental weakness would be rather difficult to demonstrate. Those who, if their surroundings had been at all propitious, would never have come knocking at our doors. We do not mean to say that they are not more or less mentally weak, but along with some slight deficiencies they possess many traits that are normal.

They are those who, for want of a better place, are where they are because of their former environments. This class of cases, of course, is limited. The same is true among a small number of the insane. Their lucid intervals so predominate and their delusions are so few and far apart and harmless that the question of their liberty arises. Is it better that the public should be thus protected, or do we owe it to the individual to take a small chance and give him a trial?

It may be that we have looked so long and so diligently for abnormalities that we fail to see normalities. It might be that we have sung the praises of institutions so long and lived so entirely within their walls that we fail to see any advantages outside. It is just possible that there are a few boys and girls who demonstrate no originality and no self-confidence because they have always lived where such accomplishments are not necessary and for the most part impossible. It might be that their services have become so valuable to the institution that we are content to overlook any misgivings we may have, and, by a course of mental gymnastics by which it is possible to sometimes convince one's self that black is white, we determine eventually that unquestionably the child is just where he should be. Might it be that our desire to have a nice institution and to raise the standard of the inmates, has blinded us to the latent abilities of a few for self-government and responsibility?

For this small minority, then, whenever opportunity offers, it certainly seems advisable to give them a trial and if they fail, as probably some of them may, you will be better satisfied, they will be better satisfied and no harm will be done.

While it is no doubt true that man is destined to work out his own salvation even in temporal things and mental, moral and physical

development is the great aim of all teaching, we have no reason to believe that man is retrograding in any of these particulars. Mentally, morally and physically he stands better to-day than ever before. Civil and religious liberty, with all it implies, is the thing we boast of. There are few so low who cannot appreciate liberty. We have not forgotten the arguments of procreation, of danger to the community, lost in competition and all that—despite them all, there are a few who may be tried, and we may find consolation in the fact that they constitute but a small percentage of their class.

But a more perplexing question, perhaps, than the one of allowing an occasional boy or girl to leave the institution, is that of administering punishment, and how we may determine the degree of responsibility. Here, again, difficult problems arise psychological problems which involve discrimination and the determination of the mental condition,—and certainly demand that the administration of punishment should be in the hands of those who have some idea of mental abnormality and some knowledge of the general forms of insanity, together with the common phases of character that accompany certain mental states. And it should never be forgotten that we are dealing with those who have already been adjudged weak and incapable of self-government.

Passion is a universal attribute. Meanness is an inherent trait of the race; cunning and deception are common to all; jealousy and envy rankle in every bosom; disobedience and stubbornness are conspicuous in every character. A display of these is an approach to an insane condition. All may be subordinate to will-power. Education, training and discipline enable us to conceal them and keep them under control. We demand a curbing of these baser passions and inflict penalties for failure among the sane. Uncontrolled passions we class among the partial insanities, and, unless subject to will-power, they place their possessor near this dividing line and may carry him entirely over. Has there ever been a time in the history of any of us when a judicious training, instituted either by parents or guardian or undertaken by ourselves, would have subordinated our violent outbreaks and uncontrolled passions? That many of us can and do appreciate our responsibility must be due to our education and training. It must also be true that some who do not are so because they have failed to keep in subjection these traits of character, or discipline with them has been lax.

Then, there are those criminal tendencies that some would have us believe are part of our inheritance. The discrimination between right and wrong, in the abstract, seems to be inherent; but the discrimination between those things which are right and those things which are wrong is largely a matter of education. Whether a sane man was ever born with criminal tendencies is questionable. It seems easier to believe he has acquired them. May the criminal, then, either by his associations or by willful neglect, ever reach that state where he is unable to discern between right and wrong or, if able, does he become incapable of controlling his criminal tendencies? If he does he is then afflicted with confirmed mental derangement, and is, on that account, irresponsible. Dealing with these cases of partial insanities, these unbalanced mental faculties, these degeneracies, requires great judgment. The hopelessness of fixing any general rules applicable to all cases is apparent,—it is a matter of individual diagnosis; a diagnosis that requires careful discrimination—a determination, not only that the patient is responsible, but to what degree he is responsible. "In these mixed states," somebody says, "it is permissible to discuss the degree of responsibility, and there is no room to apply the criterion of absolute irresponsibility which we recognize in all cases of a clearly characterized mental alienation."

Let us consider only those forms of degeneracy in which we are especially interested, viz, the imbecile and the epileptic. We may omit the idiot as nothing may be expected from him. Taking the classification of Dr. Kerlin, it is the low, middle and high grade imbeciles that demand our attention. These degrees in imbecility fix, in a measure, the degree of accountability; his class labels him. In all punishment, the idea of vengeance and of malice is to be carefully eliminated. With others, retribution may be demanded. With the imbecile, punishment is but part of his training. It is to impress his dull faculties with the idea that hereafter he must avoid such offenses. It looks rather to the future than to the past; not so much because he has offended and should pay a penalty, but with the hope that he will not do so again.

When sitting in judgment we should take account of the whole case—his best and present history, his home training, the influences that have surrounded him and his mental status—not only this, but we

must consider the provocation. There is a great difference among people in the matter of governing. We have known some who could never convince us that a child, in their charge, is in need of punishment, while we know others that the very fact of their complaining is sufficient ground to warrant such a measure. It must also be remembered that the imbecile is a child of moods. There are times, we may say, when he has his lucid intervals and reason and judgment seem to be more pronounced; there are also times when will-power is diminished and passions control. He is unstable, unequally balanced and a victim of his erratic tendencies.

The form of punishment selected carries with it degrees. Corporal punishment may be entirely ineffective with some, while seclusion may only give a lazy fellow a good opportunity for rest. Others again, may be entirely insensible to deprivation of those things which please the fancy or tickle the palate. Perhaps, of all the forms, seclusion is most lasting in its effect and is open to no objection from "over-zealous members of committees."

The epileptic is a familiar figure with us; an eye-sore to the practitioner of medicine; a source of great uneasiness to his friends and a burden to himself. Perhaps he belongs to a class of patients most afflicted. To know that one is at all times likely to fall over in a convulsion, that he is constantly liable to injury, that he is suffering from a disease that is slowly undermining his physical and mental faculties, must hang a weight around one's neck and be a heavy burden to bear. The epileptic is to be especially commiserated and his shortcomings overlooked. Here is a case where charity must be exercised and offenses condoned. His mental state is subject to great variation and his sudden changes of character are but the outcome of his disease. When his brain is clear he is usually an agreeable fellow, often inclined to be obsequious; but when his malady masters him he is often cross and quarrelsome. For him we urge the utmost consideration. Indeed we are engaged in a work where kindness, long-suffering, gentleness and charity ought to abound.

If a study of mental phenomena does not lead us to judge more favorably the conduct of our fellow-men and tone down many of our harsh judgments and withhold some of our ready comments and lend an unwilling ear to criticism and censure, then, it would seem, we have failed to learn a lesson that is constantly before us.

BACKWARD CHILDREN IN THE PUBLIC SCHOOLS.*

BY MRS. RHODA A. ESTEN, SUPERVISOR OF SPECIAL SCHOOLS,
PROVIDENCE, RHODE ISLAND.

AS education has extended to the masses it has also descended to a lower grade of society that was formerly abandoned to ignorance and neglect. From the child that is late in gaining the power of speech, whose perceptions are dull and his power of conception slow, whose muscular and nervous powers are weak, to the normal child whose native brightness is his natural teacher, the distance is not great, but it increases rapidly day by day, not because the original cause of his condition is aggravated, but because of a want of proper training and education which cannot be supplied in our schools established for the normal child.

A mentally weak child is almost without exception physically defective. The body reflects the mind or soul,—an imperfect mirror cannot reflect a perfect image. With these children physical training must precede mental, at first, and always afterwards advance hand in hand with it.

Feeble-mindedness is not always the result of deficiency or malformation of the brain but may be a state of arrested psychical development, as certain physical defects, such as hare-lip are states of arrested physical development. Development may be arrested by traumatic conditions before birth, or afterwards by accident or infantile diseases. It is a state of infancy prolonged for life unless proper training is provided.

We cannot create mind but we can build up the physical organism through which the mind manifests itself. We can provide such physical and mental training as will save a large percentage of the class from a life of misery, dependence and perhaps crime. It has been demonstrated beyond question that the best results are obtained in the development of these children's mental capacity, not by directing our efforts immediately to the brain, but by beginning with the members of the body that the brain should direct, as the hand, eye, etc. The education of these children must include the elements taught in our regular schools, combined with a course of physical training that will arouse to activity their dormant energies, strengthen their weak

*A special report to the school committee of Providence.

muscular and nervous powers, cultivate their weak wills, increase their feeble power of attention and train and educate their special senses. Their affection must be nursed, wrong habits corrected and ideas of obedience and moral rights implanted and nourished.

The requirements for developing these children are: (1) Teachers who have carefully studied and understand the reciprocal influence of body upon mind and mind upon body and are able to apply that knowledge in their work; who are comparatively young and possessed of good physical health, original in devising ways and means, versatile in presenting subjects, gentle and patient in the constant repetitions necessary to fix ideas in the minds of their pupils, and above all, having an enduring love in their hearts for their pupils, a devotion to their vocation and faith that their efforts will be crowned with success: (2) A graded course of physical exercises, beginning with the kindergarten and embracing calisthenics and industrial training adapted to the special needs of each child in order that every side of the child's nature may be developed.

Advancing hand in hand with the above must be imparted the instruction given in our regular schools, beginning with a modified course of kindergarten work. The teaching must be direct, simple, practical and concrete. The objects used for illustrating the subjects taught and those to be handled by the pupil must be larger than those in the ordinary school. Object teaching in its broadest sense must be a prominent feature. Size and age of pupils must be lost sight of for the time as these children are suffering from prolonged infancy and must be trained according to their degree of development. New principles must be imparted slowly and clearly and the lesson repeated until it is clearly understood, assimilated and thoroughly connected with and made a part of their previous knowledge. Care must be taken that the lessons in any department are not too long thereby producing exhaustion and defeating the end for which they were given.

Nature study should have an important place in the daily program. Lessons on living animals and plants interest and hold the attention of these children for a greater length of time than those on any other subject; they are real, live and concrete. Excursions for the study of nature should be made monthly and would well repay the cost. Instruction on living objects will implant in the minds of these children

the lesson of love and helpfulness for each other. The discipline should be mild, gentle and firm, and in no case should corporal punishment be used. Medical supervision is also necessary for the success of this work and the medical director should prescribe and tabulate the physical exercises necessary for each child. Parents' meetings should be held at least once a month for talks on the special need of these children in regard to diet, sleep, baths, and suggestions given for their home care and training.

For the instruction of the highest grade of this class of children there have been established, as a part of the public school system of Providence, three schools.

AUXILIARY SCHOOLS FOR BACKWARD CHILDREN.

These schools are an outgrowth of our schools for special discipline and instruction. Our teachers in the regular schools found so much relief when disorderly pupils were transferred to the disciplinary schools that they were not slow to request the removal of backward, or mentally deficient children, who were receiving comparatively little benefit in their schools, to the same school for special instruction. There were soon collected in Hospital street and Ashmont street schools a number of pupils of this class. It was at once apparent that the discipline, instruction and physical exercises necessary for the development of the bright, healthy, active mischievous boys who constituted the great majority of the pupils in these schools, were ill-adapted to these feeble, plodding ones; also, that it was not well in other respects for these pupils to be thrown together; hence in December, 1896, a special school was opened on Burnside street for the better treatment of these pupils. Fifteen pupils were placed here under the charge of Miss E. Gertrude Tift, a teacher selected from our corps of primary teachers on account of her special adaptability for the work. The same condition obtaining in Mt. Pleasant disciplinary school, the following year another school was opened in December, 1897, also a third in Orms street in December, 1898. A fourth room in Harrison street school is now used partly for this purpose.

In only one of these established schools (Burnside) is there room for proper instruction in either physical or mental training. Academy avenue and Orms street schools are located in small recitation rooms

in Mt. Pleasant and Orms street disciplinary schools. These are barely large enough to seat the fifteen pupils belonging, and the teachers are very much restricted in their plans for the physical development of their pupils and no manual training can be given, and besides, these rooms will very soon be needed for the accommodation of disciplinary pupils.

In the auxiliary schools for backward children and schools for special discipline and instruction, fifty pupils are now receiving special instruction, and, although the conditions for their improvement are greatly superior to those of the regular school, yet they fall short of meeting the requirements necessary for their full development. Moreover, a recent canvass of the regular schools of this city reveals the fact that there are now about one hundred additional children who ought to be provided for. It would be impracticable and unwise to retain the pupils longer in the regular schools, for association with children with whom they are not able to compete will discourage them, and being unable to comprehend the subjects taught, their already feeble power of attention will be lost, their interest destroyed, and the result will be that they will soon become apathetic, rendering it almost impossible for the special teacher to rouse them to activity if they are ever placed under favorable conditions for development. It must always be borne in mind that the earlier these children are placed under proper treatment the more can be accomplished for and by them. If allowed to remain in the regular schools until they reach their teens, but little can be done for them outside of custodial care in an institution.

WHY PROVISION SHOULD BE MADE FOR THEM.

The high grade of feeble-minded or backward children found in our schools are but slightly mentally defective; indeed, so nearly normal are some of them that their defects would only be noticeable to a discerning teacher or to the persons who made a study of this class, and many are bright and attractive in appearance but all are weak in will-power, deficient in reasoning power and judgment, hence, easily influenced for evil. Unless they are properly cared for and educated, they will retrograde, fall into evil ways and become victims of the vicious. A careful study of the defective and delinquent classes has proved that a large percentage of the criminals, inebriates and prosti-

tutes are from the congenitally feeble-minded class. Will it not pay the city to develop and educate these children to a standard of useful, self-supporting self-controlling citizenship, rather than later to support them and their progeny in almshouses and prisons? If any, upon a fair trial cannot be brought to the above standard, the state should provide for them in a properly conducted institution where they can neither be harmful to themselves nor to others.

Every sentiment of humanity and Christianity demands that these children be educated to the highest degree of usefulness that their limited power will allow, for it is their right to have a chance to prove what is in them.

For the better training and development of our pupils already under special instruction and for those for whom we ought to provide, I would respectfully recommend that a suitable building be secured in some central location large enough to accommodate all, and that these children be placed there under an experienced, well-trained, competent principal and a sufficient number of assistants. This would mean, of course, the transportation of the pupils living at a distance at the expense of the city, but, as these pupils who ought to be provided for are living in different sections of the city, nearly all remote from the schools already established, to properly provide for them in their own districts would require the establishment, equipment and maintenance of seven additional schools at, I think, a greater cost to the city than that of transportation; besides, the best work that could be done in these separate schools would be necessarily inferior to that which could be accomplished by concentration.

ADVANTAGES OF CONCENTRATION TO TEACHERS.

The teachers of our present schools are young, graduates of our training schools, possessed of good physical health, imbued with a love for their vocation and manifesting an aptitude for the same, but on account of their inexperience and lack of training in this work, they fail to obtain the best results. Under the direction of a trained, experienced and competent principal, they would render efficient service. The additional teachers needed would be under training from the start. The teaching of these unfortunates is peculiarly exhausting and often discouraging, hence, teachers having them in charge need to be associated for mutual help and encouragement.

ADVANTAGE TO PUPILS.

By bringing these children together they could be classified according to capacity and similar needs and much valuable time saved in teaching. They also would be able to profit by the mistakes of each other and be stimulated to a healthy rivalry.

MORE ECONOMICAL.

It would cost less to equip and maintain one large school than several small ones.

WILL CONCENTRATION STIGMATIZE THESE PUPILS?

Most emphatically, no. Such conclusion would be possible only to the ignorant who should be properly instructed, or to those unfortunates who have an arrested moral development. The condition of a feeble-minded child is more degrading than that of a child with a weak heart weak lungs or defective hearing. In each case the child is not responsible and should, therefore, awaken not only our pity, but should call forth our tenderest care and best efforts for his development. These are God's little ones, entrusted to our care—let us see to it that we are not found "wanting" in our duty.

For our encouragement and enlightenment it may be well to note what other countries are doing for this class and with what success their efforts have been crowned.

OTHER COUNTRIES.

In Europe, Germany was the pioneer in 1867. Norway followed her lead in 1874, England in 1892, besides Switzerland and Austria.

In Prussia, since 1880, the establishment of special classes of schools for defectives has been obligatory upon towns of 20,000 population. Admission is limited to children who, after two years at a public elementary school, have proved themselves unable to do the work. The duration of attendance is usually six years. The auxiliary schools, as they are called, are usually in the same buildings with other schools, or near them. To prevent possible disturbance, the times of opening and closing are fifteen minutes later than in the regular schools. The cost is borne by the town. Teachers receive from \$25 to \$100 a year supplementary to the regular salary. Of the

children that left at Easter, 1893, the following percentages were capable of earning a living:

In Aix, 68 per cent; in Dusseldorf, 80 per cent; in Cologne, 87 per cent; in Brunswick and Crefeld, 90 per cent; in Dresden, Halberstadt and Hanover, 100 per cent.

Out of 71 who left Elberfeld in 1893, there were: 17 artisans, 4 errand boys, 1 clerk, 5 unknown, 13 housework at home, 4 domestic servants, 12 factory hands and day laborers, 15 without work owing to illness.

In Norway, children tested in the special classes are (*a*) returned to the regular schools if they make sufficient progress; or (*b*) they remain in the auxiliary classes the whole of their school lives; or (*c*) are sent to an institution for mentally deficient children if their condition prove too low for special day schools.

In England, as on the Continent, the proportion of children in need of special instruction is found to be one per cent of the total school population. In June, 1899, London had 43 centers with 85 classes and an average attendance of 1,289 children receiving special instruction. Average attendance to one teacher is there 15. The average on the roll in London is 20, in Germany 21, in Switzerland 19, and in Norway 12. In London there is a special superintendent and assistant for these classes. Some of the girls attend laundry and cooking classes; a few boys are taught cooking, and a few swimming. In England special instruction of backward children was made permanent in August, 1899, by a law to regulate the establishment of special schools or classes and to bring defective children within the provisions of the compulsory attendance statute.

OUR COUNTRY.

In this country, Providence, Rhode Island, was the pioneer in 1894. In 1899 similiar schools were opened in Boston, Chicago and Philadelphia, altho the latter is not yet a part of the public school system of that city. The Philadelphia school is at present in advance of our schools in methods of selecting and entering pupils; in instruction, in that it has manual training; and in medical inspection. Is it well for the pioneer to lag behind her followers?

MEMORY OF THE FEEBLE-MINDED.

A. R. T. WYLIE, PH. D., FARIBAULT, MINN.

"Memory is the knowledge of an event or fact of which we meantime have not been thinking, with the additional consciousness that we have thought or experienced it before." Memory depends on retention and recall which are phenomena of the law of habit. Retention depends upon purely physical conditions. Matter retains to a certain extent an impress made upon it. A nerve which has been faradized retains some effect of that action for it will be more easily faradized a second time. Retention, then, is a result of the physical condition of the brain. In order that an impression should affect the brain it must endure a certain length of time depending upon the impressibility of nerve tissue. With the feeble-minded this is a variable quantity. With most of them, an impression must be repeated many times in order that it may be recalled. This is in part due to lack of nerve impressibility. The maximum of impressibility is found among those men who remember everything and anything without seemingly any effort. Lack of nerve impressibility is found in cases of amentia, that is, among those children who have never been able to learn anything from experience and exhibit only remnants of instinctive actions.

In recall we have a re-excitation of the impression. A nerve excitation can exist longer than a stimulus, as we see in the phenomena of after-image. These depend upon the continued excitation of the ganglion cells. In a higher sphere we have the phenomena of primary memory where a mental impression may continue for some time and then fade out; the impression of constricted clothing may exist some hours after removal and a person can recall a question shortly after its asking which at the time seemingly made no impression. But in order to have true memory the impression must have been absent from consciousness. However, a repetition of the impression does not constitute memory. In the first place, the memory image differs from the real image; it is less vivid and does not have the wealth of detail of the original. We see this when we look at a flower and then shut our eyes and call up an image of the same. In memory, in addition to the picture, we have the revival of associations, the recall of related circumstances and the fact that we have experienced these conditions, and

the feeling of reality. The memory picture and its associations constitute the facts of memory. The associations of the memory picture account for the fact that a repetition of the experience will not cancel the first memory of it, since in these they differ. However, a great number of experiences will do this, for after we have seen a rose a great many times we can not say that we remember that it is a rose for no definite experience is called up by it. The associations are not determined by the memory picture alone but by the whole brain state, as James has pointed out.

Looking at the physical side of these processes we find that it is not necessary at the present time to show that mental functions are brain functions, consequently a defect in the first means defect in the second. All sensory and motor functions have localized centers in the brain,—projection centers, for they are all directly connected with their appropriate end-organs. These projection centers, by means of association fibers are brought into connection with the remaining regions of the cortex. A nerve excitation at the sensory end-organ is propagated to the projection center and the mental side of the nerve discharge there, is a sensation. Thence the nerve discharge is propagated through the association fiber to other regions of the brain or the conception center, and there arise in the mind preceptions and memory proper. The child sees a lighted candle and the visual center is excited; on account of previous experience, a nervous discharge is propagated to the touch and possibly to the pain centers and then also to the naming center and the child has a perception of the candle. Later, a knowledge of its use as gained by experience will give added content to the perception. Derangements in this scheme will give certain defects of memory, as will be shown later.

The importance of instinct in the formation of perceptions and consequently as influencing memory, has not been duly emphasized. Instincts are "inherited actions or the bases of actions which were advantageous to our ancestors, the accompanying feeling being our emotion, and the same as our ancestors experienced in performance of the action." Consequently there are duly formed brain-paths ready in a young child's brain. So when a perception center has been excited by stimulus, these paths produce various associations in the conception center with consequent perception and movement. A great

number of our first perceptions are instinctive; in fact, they form the basis of our mental life. Among imbeciles these paths by virtue of disease or malnutrition are impervious or non-existent resulting in various degrees of defect from total lack of perception up. Bases of instinctive action which are or have not been detrimental to the race, we can expect to still exist in the brain although the organs necessary for their performance may have been lost in the struggle for existence. That this is true is shown by the existence of the pineal gland and the infundibulum. The diseased condition of the higher centers in the idiot and imbecile might uncover some of these vestigial bases of action, and so cause the imbecile to exhibit mental states which pertained to the ancestors of our race but among normal people are inhibited by the higher brain centers. At any rate we can expect absent or irregular brain paths in the brains of idiots and imbeciles.

Ability to attend, in this connection, means ability "to impress something on the memory." Lack and defect of attention are characteristic of imbeciles; in fact one writer has classified them on this basis. But in order to attend to a thing, this thing must develop in our minds. Look at a word in an unknown alphabet; it will not remain at the center of attention for it has no associates; it does not develop. Such is the condition of the lower grades of the feeble-minded in regard to common affairs of life. Here as above, instincts give us our primary object of attention and all of our acquired attentive states are built up from these. Consequently, failure of memory through lack of attention results from the absence of cerebral bases of association.

The higher mental processes, if not impossible without, are at least greatly aided by language. It gives a concrete base upon which the more subtle abstract notions can crystalize and no important mental advancement can be made without it. In amentia there is no perception and no memory and consequently no language, neither is there ability to understand language. In idiocy we find the first rudiments of language, the expression of a few words, perhaps, and the comprehension of simple sentences, the most obvious early results of perception and memory. However, we find remnants of the various stages of the evolution of language of the race. First, we find those whose language consists of exclamations and gestures, not being able to form

and use names. Next, we find those who can use names but usually a very limited number. Then we have those who can use nouns, verbs and pronouns, leaving out qualifying and connecting words. Last, we find those who make use of complete sentences, but in all the range is limited, becoming more so as we descend the scale. This is explained by the conditions discussed above.

Ireland finds feeble-minded children deficient in memory as well as in other mental faculties, for "in their minds every species of mental operation is performed, though on a small scale."

Complete absence of memory is found in amentia. Here are grouped those children who have not been able to learn anything from experience. Their mental life consists chiefly of sensations and emotions. All of the senses may be active or one or more of them may be absent. No association seems to be present, and consequently, no perception. The more fundamental instincts are present; they eat, sit, and some can walk and climb. Rocking motions are frequently present. They do not attend to the calls of nature and a few give indications of a higher class in making use of a spoon. They do not understand language and are heedless of danger. They do not show that they appreciate the different tastes of sugar and quinine. Sense stimulation still produces with them some instinctive reaction showing that the sense still exists, but there are no associations and consequently there is no true memory. Possibly the inertia of the brain tissue may be so great that it will not retain impression.

In idiocy we find memory, as shown by the fact of the child being able to understand language, that is, concerning the more simple things, and learning to do simple operations. In imbecility and feeble-mindedness greater powers of memory and mind are shown, as will be discussed in the tests later on.

Galton tested the memory span of several idiot girls in the Earlswood Asylum. "By memory span is meant the limit of the power of the memory to reproduce from a single hearing or seeing, immediately and without error, a succession of figures, or letters, etc." The girls were able to read and write a little. For nine girls the memory span ranged from two to five for figures. Six other girls were tested and gave results ranging from two to six.

Mr. G. E. Johnson has made a similar series of tests upon the

feeble-minded children at Waltham, Mass. Of the seventy-two children tested, the average was 5.3, which is 1.3 less than the average for normal children for eight years as determined by Mr. Jacobs. Comparing his results with those found by Mr. Bolton, he finds that the results for "all the feeble-minded children fall far below those of normal children." The results of his tests show, he says, "that the feeble-minded fall considerably below normal children in memory span but the memory span is so good in some cases and the average so high that we are led to conclude that the degree in which feeble-minded children fall below normal children is not commensurate with the degree in which the feeble-minded fall below normal children in intelligence. Moreover, it is evident that the deficiency in attention and will power, so proverbial in the feeble-minded child, would tend to cause the memory span to be lower than that which a normal child of equal physiological retentiveness of memory would have. Hence, we may conclude that weakness of memory, physiologically speaking, is not a prominent factor in feeble-mindedness. As a rule, the memory span increases with intelligence⁽¹⁾."

In testing the association time orally, Mr. Johnson found that the average time for thirty children, whose average was 13.3 years, was 5.35 seconds, maximum 10.7, minimum 2.7. Ten normal boys with the same test gave an average of 2.61 seconds, maximum 3.47, minimum 2.06. He finds that their association habit is characterized by "simple objectivity and great slowness." In fact, the paths seem often to be "wormed out."

In order to test the visual memory of our children the author made use of form, color and letters. For the first, ten forms were cut from cardboard, the more common geometrical forms as well as some irregular ones being chosen. Two sets were made, one for the child and one for the experimenter. For the color tests, ten colors were selected from Bradley's colored papers, the endeavor being made to get them as unlike as possible and affixed to cards. For the last test, paper letters mounted upon cards were used, the consonants being chosen so as to exclude syllable formation. The child being ready for the experiment, a set of forms, colors or letters were arranged before him on the table; five of the same series were then shown to him by the experimenter for two seconds as indicated by a metronome, then

(1) Pedagogical Seminary, Vol. III, No. 2; Journal of Psycho-Asthenics, Vol. II.

they were covered from view and the child was required to select the same five as he remembered them from the sets of objects before him, the order of selection being disregarded. Five trials of each sort were made and the number of correct selections noted. The results were as follows:

	FORM	COLOR	LETTERS
Girls 26	2.3	2.4	2.5
Boys 25	2.5	2.3	2.7

Thus, out of five objects these were the average number correctly remembered. The ages of the children ranged from fifteen to thirty and we think that we are not wrong in expecting almost perfect answers to our tests from normal people of the same age. The memory error for five objects of our children is:

	FORM	COLOR	LETTERS
Girls	2.7	2.6	2.5
Boys	2.5	2.7	2.5

Grouping the children according to mental ability as estimated by their teacher. A being the brightest, we have:

	FORM	M. V.	COLOR	M. V.	LETTERS	M. V.
Boys A	3.3	0.6	3.2	0.5	4.1	0.5
B	2.9	0.3	3.0	0.4	3.2	0.4
C	2.5	0.6	1.7	0.9	1.8	1.0
Girls A	2.9	0.4	3.1	0.5	3.6	0.7
B	2.4	0.4	2.5	0.5	1.8	0.8
C	1.9	0.7	2.0	1.2	2.2	1.6

Interpreting the mean variation as the uncertainty of memory and deducing the memory error from the other columns, we see that the error and uncertainty of memory increase with mental dullness. In regard to the influence of the knowledge of the names on the memory of the objects, we find that the average number of names known by each child is:

	FORM	COLOR	LETTERS
Boys A	4.5	6.6	10
B	3.5	5.0	7.8
Girls A	4.1	8.6	10
B	2.0	2.0	1.0

This shows a slight influence in colors and letters with the girls.

The tests so far having to do with visual memory, we next took up for consideration the auditory memory. To this end we made use of the following tests. First a series of nonsense syllables were made, endeavoring to get some as free from association as possible. These were read to the child at the rate of one per second, five making one test. Next were selected groups of six associated words which were likewise read to the child at one per second. He was required to repeat them immediately and both the words remembered and the number of associations were noted. Lastly, groups of sentences were selected from their school readers. These were of various lengths from five to thirty-five words. They were read to the child at the rate of a word per second and he was required to repeat it immediately. The number of words correctly remembered was noted. The results were as follows:

	SYLLABLES	WORDS	ASS'N	SENTENCES
Boys	2.1	3.9	1.8	10
Girls	2.1	3.7	1.9	12

The small number of associations and the large number of words is very noticeable. Chance we consider to be excluded by the method of work of the children.

Grouping our results according to the mental ability of the children we have:

	SYL.	M. V.	WORDS	M. V.	ASS'N	M. V.	SENT.	M. V.
Boys A.	3.0	0.4	5.0	0.2	2.8	0.4	15	3
" B.	2.1	1.1	4.0	0.6	1.6	0.7	12	6
" C.	1.6	0.8	3.1	0.9	1.4	0.6	7	3
Girls A.	2.5	0.7	4.2	0.6	2.2	0.6	16	5
" B.	2.1	1.5	3.5	1.8	2.1	1.2	10	5
" C.	0.9	0.5	3.3	0.6	1.3	0.6	5	2

Here, as above, we find the error and uncertainty of memory increase with the mental dullness. These tests in auditory memory seemed easier to perform than those for visual memory, for four girls and two boys graded C, while being able to perform the auditory tests, could not do the visual tests. Grouping the results to show the average number remembered in each way, we have:

	AUDITORY	VISUAL
Boys	2.6	2.4
Girls	2.6	2.5

This shows practically no difference. Yet five girls and two boys said that they remembered by "looks" and seven girls and nine boys, by "name." However, we have seen some influence from the knowledge of the names in the visual tests.

The same children were given a test on the memory of muscular movements. A graduated rod was fixed on suitable supports and two adjustable stops or rings were placed on the rod so that any distance could be set off by them. Three distances were used; ten, thirty and fifty centimeters. In performing the test, the child was seated so that one of the stops on the rod was in front of him, the other stop was set at the required distance; with eyes shut, the child then moved the index finger of his right hand from the one stop to the other and then back. The outer stop was then removed and he was required to move his hand over the original distance as he remembered it. In the first series this was done immediately, then after a wait of ten seconds, then of twenty seconds. The results for 100, 300 and 500 millimeters were as follows:

	0 sec.	M. v.	10 sec.	M. v.	20 sec.	M. v.
Boys 17	108	8.1	111	10.2	144	19.6
Girls 17	108	7.7	113	15.2	108	14.5
Boys	311	16.5	279	23.6	271	27.6
Girls	287	17.8	282	21.8	277	24.7
Boys	490	18.7	463	33.2	447	31.8
Girls	476	18.1	457	22.4	456	23.1

The averages found by Scripture for the same distances:

0 sec.	M. v.	10 sec.	M. v.	20 sec.	M. v.
—1.0	0.9	—3.1	1.1	—0.1	1.2
—|—to 2.8	to 1.3	—|—to 2.8	to 1.7	—|—to 4.0	to 1.9

Comparing these results from normal people with the ones we have given, we find the memory error of the feeble-minded to be from two to ten times the normal and the uncertainty of memory to be from five to fifteen times the normal. The memory error,

as with normal people, increases with increased distance while the uncertainty steadily increases. Grouping the results according to mental ability, we have, for 200, 300 and 500 millimeters:

	0 sec.	M. v.	10 sec.	M. v.	20 sec.	M. v.
Boys A.	102	6.1	104	10.3	104	13.9
“ B.	107	9.5	111	11.7	140	19.8
“ C.	110	8.9	121	8.4	196	26.2
Girls A.	107	7.6	115	16.4	103	11.9
“ B.	115	12.6	100	6.0	144	33.8
Boys A.	305	17.2	282	25.4	268	28.1
“ B.	297	10.3	259	21.5	305	24.6
“ C.	320	23.3	298	24.0	355	31.8
Girls A.	291	14.2	280	22.4	274	25.8
“ B.	273	35.7	297	16.8	302	17.0
Boys A.	497	15.3	473	46.8	419	31.9
“ B.	483	20.9	429	30.5	455	40.5
“ C.	489	18.9	493	20.2	470	21.3
Girls A.	484	16.8	458	23.1	455	24.2
“ B.	430	24.1	448	17.0	465	15.2

As a rule the error and uncertainty of memory decrease with intelligence, the results showing some variations probably due to the number examined.

Our results show a great increase in the error and uncertainty of memory among the feeble-minded both auditory, visual and muscular. This memory error may be due either to a rapidly fading or to a dull memory image. A rapidly fading image, other things being equal, means a rapid nerve activity. But this is contrary to all our ideas of the imbecile. He is dull, slow and immobile; his reaction time is much slower than normal, as we have shown heretofore. Consequently, a simple rapid fading of the image will not explain all the facts.

A dull memory image can be due to an inactive central element or to lack of association. A rigid central element, as a consequent of rigid brain tissue would need strong stimulation in order to produce an adequate impression. Therefore, ordinary stimulation produces defective impression which means imperfect retention. Furthermore, the feeble-minded person requires a stronger sense stimulation than

the normal as we have shown in our researches upon the senses of the feeble-minded. The same is observed in their pleasure and in their daily actions. So we regard feeble-minded persons as subnormal in the physiological retentiveness of memory. Again, a rigid brain tissue would under ordinary circumstances be conducive to a rapid fading of the memory image.

However, by strong stimulus and prolonged impression the image may become fixed. This explains the fact that the feeble-minded are creatures of habit. They dislike the unusual. This is particularly true of the lower grades. Any change of their daily routine, such as change of place of sleeping or of eating at the table, is met by remonstrance. The brain paths are fixed and the new ones either can not be made or are made with such difficulty that the change is disagreeable to them. Consequently, the formation of proper habits with this class of children is of the first importance; this applies particularly to habits of person and daily care.

Defective association will produce a defective and inexact memory image. Deficiency in association has been shown above. This can also be explained by brain rigidity and defect resulting in impervious and lacking brain paths. Thus would also be explained imperfect recall and the high uncertainty of memory.

In the memory tests given above, the child was always asked the names of the forms, colors and letters, to see if he could name them or if he had names for them. The general results of this questioning have been indicated above. But in addition to this we have found, especially among the lower grades, a name difference; that is, they did not apply the names to particular objects. This was true of five boys and four girls. Thus colors would suggest color names, but the individual color would not suggest its proper name. In fact, there seemed to be a general association and in one case the colors did not even suggest color names. This is in parts, no doubt, explained by sense dullness and the consequent lack of discrimination as indicated above; they need a greater sense stimulus and a greater difference for proper appreciation. Consequently there is a lack of secondary association paths which differentiate the color sensations and unite them to a particular naming center, so all the color sensations arising in the sensation center are associated with all the color names in the naming

center, the particular one arising depending, probably, on local conditions. Some of the brighter children, when they did not know a letter, would say so, showing a higher differentiation in the associative facts. In investigations on the localization of cerebral function it is found that on stimulating a certain cortical area in an animal like a cat or dog a complex movement of a number of muscles will take place; higher in the animal scale, stimulation of a definite area will cause a more simple movement, limited, perhaps, to one muscle; thus showing that in the higher animals the individual muscles are represented in the cortex, while in the lower animals it is only groups of muscles that are so represented. Such conditions might result in the idiot brain when the areas due to later racial experience have been destroyed by means of defective nutrition or disease.

This brain rigidity is due principally to diseased conditions, for rarely if ever do we find cases which we can consider as arrested development for they show the irregularity and complexity of processes which result from diseased conditions. Exhausted conditions of the brain, especially in their less acute stages, show similar states of rigidity and loss of association. Our accidental cases are those whose condition is the result of disease in early life, and the congenital cases we can explain either by disease or malnutrition of the embryo because of the imperfect condition of the mother from mental or physical stress; hence the starving of the areas corresponding to the higher mental processes, hence their defective and irregular development.

The continued study and collection of cases of aphasia is teaching us a more definite cerebral localization; thus our memory images of words, letters, figures and position and places seem to be localized in certain definite areas. This leads us to the notion that every memory image is separately located in the brain. Hence, in diseased conditions some would be destroyed while others would be left. This would explain the difference in ability of our children; they remember one kind of images better than another. Some can be taught to read and write and others only some kinds of work. In our experiments we found some that could perform the muscular tests that could not do the others; the same was found true of the auditory tests.

Pedagogically these tests may give us some indication as to the most advantageous methods of teaching a child as well as the line in which he will work the best results.

SPECIAL SCHOOL FOR SPECIAL CHILDREN.

By DR. SAMUEL J. FORT, ELLICOTT CITY, MD.

AS early as November, 1892, the Minister of Public Education in Berlin published an order referring to the fact that in several cities of the Kingdom of Prussia the local school authorities had arranged for separating from the majority of pupils, children intellectually slow and dull, but otherwise normal and by no means to be confounded with idiots, by establishing either special schools for them or separate classes in large schoolhouses. He particularly emphasized the consideration that the pupils to be selected for this special instruction should not be idiots, that is, children so entirely defective as to be suitable only for asylum care, for such children had no place in public schools but children should be selected who are a "dead weight" in school, failing to be promoted because of their inability to keep pace with average pupils. Such children might be benefitted by methods specially adapted to their weakness, and the course of study might be altered or curtailed to suit their capacity. He furthermore insisted that every pupil assigned to these special schools, or separate classes, must be subjected to careful physical examination by a physician to determine whether their intellectual weakness be not the result of defective senses, or other causes that might be removed. He closed his order by calling for a report from every school inspector in whose district such an establishment exists.

In 1894 was published the result of this inquiry, which showed that eighteen cities of the kingdom maintained such special schools or classes; that while in previous years these classes had been partially filled with children morally unsafe, they had lately been withdrawn. and now only children of dull intellect were thus treated separately. These were pupils who, during an attendance of two or three years in graded schools, had given evidence that they could be taught but were unable to keep pace with normally endowed children.

The figures given for 1894 are as follows: Eighteen cities, twenty-six institutions, seven hundred pupils, forty-three male and twenty-one female teachers, and an average of about twenty-four hours work per school.

In August, 1896, a school report showed an increase to twenty-seven cities, and the number of pupils had increased to 2,017.

In 1896 a royal commission known as the "Committee on Defective and Epileptic Children", was appointed by his grace, the Duke of Devonshire, and directed to report as fully as possible upon the expediency of separating feeble-minded and epileptic children from otherwise normal children in the public schools of Great Britain, and the report of this commission published in 1898 is an extremely thorough and scientific study of two classes of defectives that have been studied only by experts whose lives have been devoted to the care and training of such children; and while the half century of work done by these men and women has wrought results of great value, it is but recently that the general public have become interested. These reports and the work done abroad, combined with the work done in this and other countries, probably mark an era of marked advance in this line of sociologic study. That it is a subject of national importance must be admitted. When we contemplate the enormous army of quite 100,000 feeble-minded individuals in the United States, and realize that only about one-twentieth of this number is under any sort of training and further realize that with every eight hundred normal-minded added to our population, there is one more feeble-minded recruit; when we contemplate what I believe an indisputable fact, that not less than one per cent of our public school children need special training by reason of their inability to keep up with the average of their companions; and further, if we study the inmates of our reformatories and come to the conclusion that a large percentage of these boys and girls are below the normal standard of mentality, it becomes necessary to consider what shall be done for these people. We are beginning to believe that the state must assume the care of the dependents in all their varieties; and while there are two points of great importance to the taxpayer and citizen,—one, how to prevent further additions to this class; the other, how best to care for and train them into an ability to produce all or a part of their subsistence—I can only take up the discussion of the latter point so far as it concerns two sub-classes of defective children.

It is unfortunate that we have not yet decided upon a definition of the term feeble-minded. Perhaps it is impossible, in that the term

covers all grades of mental deficiency from the high grade, which the elder Seguin naively described as being so near to normal mentality that even good judges could not tell the difference, down to the low grade whose total mental development by training has resulted only in a certain amount of ability to do elementary work, such as sweeping or scrubbing floors. Kerlin gives us the most succinct classification yet known. He divided them as follows:

Feeble-minded {	Imbecile {	High Grade
		Middle Grade
		Low Grade
	Idio-imbecile	
Idiot {	Noisy	
	Apathetic	

But this was made strictly from asylum cases, and of these it is not necessary to speak further than to say they are usually recognizable by even the inexpert and should be placed in institutions.

It is not to these cases I desire to call your attention, but simply to those already mentioned in the two reports from Great Britain and Prussia, those who, by reason of some deficiency, are unable to learn by the ordinary methods of instruction. These might be classified somewhat as follows:

1 Delinquents {	Incorrigibles
	Truants

2 Dullards.

I am not quite prepared to state that all delinquents are *per se* defective mentally, though I am fully convinced that they need a better and more scientific training than is usually given in the present type of reform schools.

Probably all defective children are delinquent to a greater or less degree, but there is a large number of delinquents who are suffering from lack of proper environment rather than from a serious lack of brain matter and any movement looking to a recognition of their claims for proper mental, moral and physical development should have the unqualified support of every thinking citizen. We have only to

study our own children and think for a moment of what they might become in their relations to society, if not surrounded by the advantages we are able to give them, to better understand what these neglected members of the body politic need to make them honorable, self-respecting home-makers.

Time and space forbids closer discussion of the needs of the delinquent classes. As I have already stated, a large percentage should have been recognized as mentally deficient and placed in proper institutions rather than in the reformatories of our states but they are at least having some training and that is better than none at all. Perhaps the day is not far distant when we shall be able to do better by this class than now.

HOW CAN THE DULLARD BE RECOGNIZED?

The teacher, as a rule, can pick out a large percentage and competent medical men could readily sift out the balance. This in itself is a plea for competent medical oversight of our public schools, for surely we must relieve the teacher of every handicap if we would demand the best work. While unhygienic schoolrooms are a decided handicap, let the teacher tell us how a dull, apparently stupid boy or girl hinders all school work; how every plan for any grade must be shaped with regard to effect upon the dullard—a butt for his brighter companions, perhaps mentally competent to enjoy mischief without due realization of its consequences, or he may be bright enough to acquire just sufficient knowledge to become a dangerous element in his rank of society without a corresponding growth of judgment and moral strength to keep him within the bounds of propriety.

The teacher, then, in consultation with a competent medical inspector would probably sift out the incompetents without much trouble.

The British report mentioned does not discriminate between feeble-minded and ordinary children until after the age of seven years. I would take issue with this point, for my experience leads me to believe that properly equipped kindergartens, who have to deal with the public kindergartens, are quite capable of recognizing backward or feeble-minded children, and while the same methods as pursued with ordinary children up to the age of seven are justly said to be pro-

per for the feeble-minded child of the same age, I fail to understand how any one with experience could possibly believe any system of training or teaching applicable to a feeble-minded child of any age, without modification to suit the individual. There is just where the matter hinges,—the fact that the feeble-minded child demands an individual training and special attention to his personal equation, admitted by these experts to be apparent after the age of seven,—but I admit that our experience with the kindergarten system, as exemplified by our best kindergartners, has proven beyond question its value to the child under seven, and I cannot help but believe that the younger a feeble-minded child is placed under training the better for the child and the better for his future trainers.

There are many children now hopelessly beyond anything in the shape of disciplinary training, who might have been more valuable as workers had they been taken in hand at an earlier age.

The teacher in the special school must be trained, even though born to the work as many seem to be. They should have the qualification of sound physical health to begin with, otherwise personal idiosyncracies are bound to crop out and react in the classroom. An even disposition is incompatible with imperfect digestion. Boundless tact, originality and perseverance are absolutely necessary. Personal appearance has much to do with the ability of any teacher; neatness of person and dress commands respect and helps produce obedience, both elements of success. I fancy that women will make the best teachers for these special classes. It has proven so in all our institutions of the feeble-minded; but, whether male or female, the teacher should be well grounded in the elements of manual training and drawing, if possible a trained kindergartner, and it would do no harm if she had some knowledge of nursing. With this let her be able to walk, run and jump, for how can she set the pace for her class unless able to do what she wants her pupils to do?

THE HOURS.

Naturally, in dealing with such children, we must be careful not to unduly prolong the day's work. Neither can we with property overdo the time given to any one exercise. In Germany about twenty-four hours are spread over six days; in London, twenty-five hours per week

of five days; two hours noon intervals, fifteen minutes recesses, morning and afternoon.

It is quite probable that two and one half hours between the two sessions will be found the proper hours.

COURSE OF INSTRUCTION.

In mapping out a course of instruction for such schools it becomes somewhat difficult to decide just what shall be the eventual object of the school training. If we are dealing with a mind that can be developed so that its owner does really come to a mental maturity, we must be prepared to do more than we would if our only hope was to prepare the mind for a life residence in an institution for the defective. Is it not a solemn problem for us to solve? Can we accept a theory that there are brains whose cells are simply latent, and under proper training will come to a condition enabling them to earn a living for the owner, and not only this but become so nearly normal that children of such a man or woman will be stronger mentally rather than weaker than their parents? This is what we have to consider and judge wisely. The evils of heredity, of alcohol, syphilis, tuberculosis, *et al.*, are known and appealing to legislators to regulate the laws of marriage, and thus in a measure stem the tide of defectives arising from these sources, but can we submit even these trained dullards to the test of progeny? I doubt it, but let us see what is the best method of training such minds as are found in our schools.

The elementary training must of necessity be specially adapted to the child and, so far as my own experience goes, I would limit the primary work to reading and writing, with special work in arithmetic that would simply be supplementary to what I am a firm believer in as the proper sphere of such children, viz, manual training.

The schedule would be almost entirely optional with the teacher with this proviso: The most difficult mental work should come in the morning; no lesson should occupy over thirty minutes; each lesson should be preceded by short physical exercises. These points I will speak of later.

These children vary greatly in their mental development at any given age, hence the wisdom of giving the teacher more or less latitude in assigning work to any given pupil.

The choice of instruction when we come to manual training is large and continually growing. For the younger children, all the occupations of the kindergarten; for the older boys, wood-work basket-weaving, machine sewing and knitting, book-binding, shoemaking, mattress-making, cane-seating, brush and broom-making; the girls, needle-work cooking and laundry work with some of the lighter handicrafts usually taught the boys.

There are more reasons than one why manual training is of especial value in the schools under discussion. It is well known by oculists that a large proportion of our public school children have defective vision, and that these defects, particularly myopia, increase with the advancing grades of the schools; those who deal with the ear likewise find aural defects, and it is safe to say that there are many dullards, simply because of physical handicaps such as have been mentioned. Now training the eye and hand, as is done by instruction in mechanic arts and drawing, lends us most important aid as a means to diagnosis of these defects; and here again comes in the great value of trained medical supervision of all schools, for when the teacher discovers a gross defect, the pupil being examined by the medical man in charge has his difficulty diagnosed and treated.

Another point, we can judge very much more closely of the result of good or bad work with tools and upon material than is possible to size up the ordinary work of the classroom; the teacher sees the mistakes, the child sees the same thing, and not only that, in many cases certainly the teacher notes the reason why the mistakes have been made and the child can be shown more readily how to correct it. There are no rules to memorize, no intricate theories involved; it is a plain use of easily perceptible facts; the corner is not square; it is not an angle, nor a geometrical problem; it is two pieces of wood and a piece of iron,—all three must agree in a certain way easily seen and understood, still more easily corrected by the aid of a few touches from the knife. Now the child may never appreciate the full value of the operation completed satisfactorily to his teacher and himself, but see the possibilities offered to an acute observer as the teacher must be. Is there misunderstanding of instruction or direction? are there sensory defects of any kind? Is there actual deficiency of mental ability? The teacher may possibly not recognize the exact reason for the results

obtained, but there must be a pointer towards the seat of the trouble, and certainly enough would be learned to aid in modifying the work if necessary, or aiding the pupil in some other way to overcome his disability.

The late Francis A. Walker, president of the Massachusetts Institute of Technology, well known in Baltimore, says of manual training: "What orthopædic surgery is to the body, such I believe, manual training in childhood is to the mind. I care comparatively little for its influences upon eye or hand. Its chief work, in my view, is educational, and in educational work I place foremost its power of rectifying the mind itself; of straightening the crooked limb, so to speak; of strengthening the weak joint; of healing the lesion which, if not cured, will proceed to deep and irreparable injury. Not one of us but has seen seemingly hopeless cases of deformity and weakness in childhood completely cured by the splints, the massage, the fomentations and the heroic surgery of the orthopædist. Benefits similar at least in kind can, I believe, be wrought in the care of many children who enter our schools suffering from inherited and acquired defects of mental constitution and organization, by the judicious and intelligent use of the mechanic arts as educational instruments. I am speaking," he says, "for a great body of children who, but for this new instrument of education in the hands of intelligent and skillful teachers, may go into life with serious mental defects uncorrected and even unsuspected; defects which will more grow serious and more hopeless with the progress of time and with experience of life."

PHYSICAL INSTRUCTION.

As many of these dullards will be found physically defective, the need of a competent medical inspector becomes apparent, and one of his duties should be the mapping out of physical training necessary to counteract these defects as far as possible. The larger muscles should be trained before the smaller, special attention being given to breathing movements and exercises calculated to develop air space. Along with the specific physical training should be given plenty of instruction in games, and I mean by this, that just as much attention should be given by the teacher to developing the ability to play as to the development of any other faculty. I have seen many cases of children who

would listlessly perform such exercises as their teacher prescribed, but when called up for running games become animated and eager.

ENVIRONMENT.

Obviously it would be impossible to have many of these special schools in the country, but we must see that each teacher has not more than twenty children under his or her care; that as large an individual room area as possible should be provided,—certainly not less than twenty square feet per capita, which would give two hundred and forty cubic feet with twelve foot ceilings—well lighted, heated and ventilated, with every hygienic advantage indoors, and sufficient space contiguous outdoors for play and exercise.

“The ends of exercise may be characterized, in a general way, as first, the promotion of health; and, second, the formation of proper habits of action. The one is a hygienic end while the other is a distinctively educational end. It matters not whether we consider a single muscle which admits of only a single limited motion, or a group of muscles, or a complicated system of muscular organs, like the organs of speech, or the communal structure we call the body, or a class of school children, or a football team, or a regiment of soldiers; the ends of exercise are practically identical in each case and can only be attained through a combination of hygienic and educational measures.

“The main field of education is the nervous system, and the principles of all forms of education into which physical training enters as a factor are based upon the power of the nervous system to receive impressions and to register them or their effects; in other words, upon its ability to memorize the part it has played in acquired movements and on occasion to revive and repeat such movements. The student of nervous disorders notes carefully the peculiarities of his patient's movements in order to determine the seat of his injury or weakness and the nature and extent of his disease. It is equally necessary that the practical teacher should apprehend the significance of the spontaneous and acquired muscular movements of his pupils, be those movements coarse or fine, since those movements constitute an index of the brain which it is the teacher's business to develop and train, and also serve to measure the success and test the character of the teacher's efforts at instruction. This is true not only of instruction in football,

military drill, gymnastics, sloyd, shoemaking and sewing, but instruction in drawing, singing and in the three R's as well. Genuine success in any of the departments of instruction mentioned above is conditioned on the intelligence and skill of the instructor in selecting and teaching such forms of neuro-muscular action as are adapted to the sex, age and capacity of his pupils.

"The motor element in education is so large and of such vital importance that we hazard little in predicting that the systematic study of movements is destined to play a much more prominent part than has been accorded it hitherto in the professional training of all classes of teachers. 'It can scarcely be too often reiterated,' says Mercier, an English alienist, in his *Nervous System and the Mind*, 'that the study of movements is the only means by which we can gain any insight whatever into the nervous system.'* *

"If this be true—and who shall gainsay it—is it not evident that educational measures of every kind should be selected and co-ordinated so as to conform to the order and rate of growth and development of the fundamental and accessory neuro-muscular mechanisms of the child and the adolescent? Is it too much to ask that educationalists should recognize, ponder upon and be guided by the laws of development which determine the health and power of the brain centers and the health and efficiency of the servants and ministers of those centers, namely, the skeletal muscles? It is true, doubtless, that the laws of development are recognized, in a way, in the conventional division of schools into elementary, secondary and superior; but it is no less true that the bodily and mental characteristics which differentiate children from youth, and both from adults, are deserving of more careful study and much fuller recognition than they have received hitherto from teachers as a class, or from those charged with the appointment and control of teachers. 1"

What has been said of the dullard applies equally well to the epileptic, so far as elementary, mental, manual and physical training is to be applied. It is thought that special schools should be upon the ground floor as far as possible, and this also applies to the schools or class-rooms for epileptics. Whether separate classes are to be maintained

(1) Report of Dr. E. M. Hartwell, director of physical training, Boston public schools.

for these children is as yet a question. Probably the weight of opinion is in favor of total separation.

I think that those who have worked among children afflicted with this most dreadful disease can hardly ask a further discussion of their need for sympathy and aid just as far as human ability can give.

We, of the medical profession, confess our inability to do more than mitigate to an extent the manifestations of the disorder, and perhaps by treatment and training maintain such degree of mental ability as the child may have; further than this we can not go at present. It remains for those not thus afflicted to contribute their share towards making their shadowed lives as comfortable and happy as possible. The children of the rich suffer just as much as the children of poor, but wealth brings to them many hours of pleasure outside the reach of those who cannot pay for companions, books, pictures, toys and changes of environment. Victor Hugo says: "Those who have seen men suffer know nothing, they should see women suffer. Those who have seen women suffer know nothing; they should see children suffer."

Is not this plea sufficient for us to take home and think about aside from any utilitarian policy that bids us take charge of these weaker brothers and sisters and so mold their youth that they may not, when adults, come within the grasp of the law as criminals, but if duly recognized as unable to take up their own support as a whole, may contribute at least in part and under proper guidance and aid lead a harmless, if not very useful existence?

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MEASUREMENTS OF CHICAGO SCHOOL CHILDREN.

Quite an important start has been made in the work of systematic observations of school children in the Chicago public schools. From an address by Dr. W. S. Christophers read before the American Pediatric Society at its Washington session in May, and published in the Journal of the American Medical Association, we glean these facts.

The work was begun March 6, 1899, and was confined first to obtaining the following facts:—1, height; 2, height sitting; 3, weight; 4, ergographic work (showing fatigue); 5, strength of grip, right and left; 6, hearing right and left and 7, "vital capacity" as shown by spirometer tests. From March to June, 1,200 were examined. By April 22, 1900, 5,636 observations had been made. "In addition to these

observations, sight tests have been made. Acuity of vision has been determined by Snellen's cards, and examinations have been made as to color-blindness. In addition to this, obvious developmental defects have been noted and signs of fatigue and nerve-strain recorded."

HEIGHT—STANDING.

"The stature of girls is less than that of boys up to the age of eleven, when the girls surpass the boys and remain greater in stature up to the age of fourteen. After fourteen, girls advance in stature very slowly, and very slightly while boys continue to increase until eighteen. This fact is in harmony with the common observation of the earlier occurrence of puberty, with its greater activity, in girls than in boys.

HEIGHT—SITTING.

"In this measurement girls also surpass boys at the same age as in stature. But they maintain this superiority in this measurement for one year longer than they do in stature, which means that the more rapid growth of the boys at this age is in the lower extremities rather than in the trunk".

It is found that the weight of the girl surpasses the weight of the boy something over a year later than her stature surpasses his; viz., between twelve and thirteen. The weights of boys and girls are equal at the same age that their statures are equal; viz., about fifteen or a little earlier, so that the girl holds her superiority over the boy for a shorter period than her superiority in stature. While the stature of girls increases very slowly after fourteen, the weight continues to increase rapidly to sixteen and less rapidly thereafter.

ERGOGRAPHIC RECORD (as an index of general endurance).

"Up to the age of fourteen the girls' power is a fairly constant percentage of the boys'. From fourteen years on the girls' endurance remains practically stationary while that of the boys not only continues to increase, but increases at even a greater rate than it had previously.

"Such a fact seems of prime importance. It must have some bearing on the development of the growing girl, and especially on the development of the reproductive organs. It is a factor which ought also to be taken into account in school work."

The ergograph gives two kinds of information. (1) The amount of energy expended by the individual and (2) the manner in which the energy is exerted, viz., the regularity as to time and the variation as to degrees of force.

The ergograph is not of value for the examination of children under seven. Examination of children for fatigue during the day shows, as would be expected, that the child is at his best early in the morning. After about ten o'clock his power rapidly declines till the noon recess, after which it rises a little more than half way to its morning strength, as shown on the chart tracing, and then declines again till the close of school, though it does not decline so rapidly as in the forenoon.

GRIP.

There is a marked increase in the rate of gain in the grip of boys commencing at the age of puberty—a gain which continues at least as far as our own observations go. In girls no such acceleration in muscular strength at puberty is shown, and after sixteen practically no increase in strength of grip occurs. This shows, therefore, the period of life at which, and the extent to which, the well known muscular differentiation of the sexes occurs.

Our readers will be especially interested in Dr. Christopher's conclusions concerning the relation between intellectual and physical conditions. "As a result of his examination of 33,500 school children in St. Louis, in 1892, Dr. W. Townsend Porter concluded that there is a physical basis of precocity; that dull children are lighter and precocious children heavier than the average child; that mediocrity of mind is associated with mediocrity of physique. At the outset of my observations I determined to reinvestigate Porter's proposition, and have to say that such facts as we have been able to collect go to confirm it.

"My observations, therefore, so far they go, support Porter's conclusion that superior mental and physical qualifications are generally associated, and inferior mental and physical qualifications are likewise generally associated."

VISION.

Thirty per cent of the children at the age of six years manifested only twenty-thirtieths or less of normal visual power; forty-two per cent at seven years; thirty-six per cent at twelve years twenty-three

per cent at fourteen years with a return to previous standard at sixteen. The variations of sensory, intellectual and physical power noted during the period of pubescence serve to emphasize the importance of extreme care in the management of children at this important time of life.

We quote in full Dr. Christopher's remarks on "Backward Children."

BACKWARD CHILDREN.

"It is in the study of backward children that the lines of thought of the schoolmaster and children's physician come together most intimately. In every large school system there is to be found a considerable number of pupils who are too backward mentally to keep up with their classes, or, indeed, to even drag along, and whose presence in the classrooms with normal children serves only to retard the latter without appreciably benefiting themselves. They are, however, not sufficiently backward to warrant putting them in the state institutions for the feeble-minded. The defects from which these children suffer, and to one or more of which, in each individual child, is to be traced the cause of its intellectual deficiency, may be classified as follows:

DEFECTS FOUND IN BACKWARD CHILDREN.

<i>Location</i>	<i>Kind</i>	<i>Cause</i>
Sensory tracts.	Structural—	·Heredity—
Central nervous	developmental.	Environment.
System.	acquired.	Nutrition.
Motor tracts.	Functional—	Infection.
	developmental.	Climate.
	acquired.	Dwelling.
		Clothing.
		Physical activities.
		Mental activities.
		Discipline.
		Traumatism.

"Diagnosis of a backward child consists in:

"1. Determining the defects present—sensory, motor or associative.

"2. Determining the kind of defects—structural, functional—developmental, acquired.

"3. Determining the causes of these defects—heredity, nutrition, infection, and other environmental factors.

"In making such diagnosis it is evident that three is required the services of the practical pedagogue, the psycho-physiologist, and the medical man. So also in the management of the cases the practical knowledge of both educator and physician must be brought to bear. Moreover, they must work in consultation and not at long range. The close relationship between medical and educational work is thus readily seen in the management of the backward child. A moment's consideration will also show that this relationship is equally close in the management of all other children. While the physician and educator are ready to meet and combine their efforts on behalf of the child, it is unfortunate that that the moral teacher seems not yet ready to come in to complete the trio.

"A large part of modern education is devoted to processes of developing the senses and the motor functions. From the natural limitations of his methods of work, however, the schoolmaster is often unable to have his subject in the best condition to profit by his methods. He cannot fit spectacles; he cannot remove adenoids; he cannot supply deficiencies in food, whether quantitative or qualitative; he cannot remove toxic influences. Some of these things the physician can do. These remarks on the subject of backward children apparently somewhat remote from the subject-matter of the paper, have their reason in the results of an examination of twenty backward children in one of the Chicago schools last spring. These children were gathered together into a so-called "ungraded" room. There were sixteen boys and four girls. The average age of the boys was eleven years, five months, and ten days; that of the girls was ten years, four months, and twenty-one days. A number of developmental defects was noted among these pupils which would suggest imperfect formation of the brain. Two are marked as microcephalic, their heads below normal size. Seven of the twenty are recorded as having cranial asymmetry, eight having asymmetrical faces. Six are noted as having peculiarly formed ears, and nine as having narrow, high, or imperfectly formed palates. Five of the pupils had decided eye defects the visual acuity twenty-thirtieths or lower, while thirteen had hearing so defective in one or both ears as to place them at a disadvantage in school work.

That is, sixty per cent reached a subnormal point in hearing to which only twenty-four per cent of the Alcott school pupils of the same age fell. Malnutrition was shown by marked anemia in two of the pupils. Want of muscular tonicity was noted in seven. The nervous ergographic tracings with most of these children and the small amount of work done on the ergograph by them would indicate the same condition.

"The averages made by these pupils were lower in every particular than the average made by the Alcott school pupils of the same age, as will appear from the following table.

Comparison of the averages made in the tests by the pupils of the ungraded room with the Alcott School averages, reduced to the same age.

	Net Height mm.	Height— Sitting. mm.	Weight, kg.	Work on Ergograph. cm. kg.	Combined Strength of Hands, kg.	Vital Capacity. c.c.
Girls of ungraded room.	1,274	692	27,325	100	23.8	1,375
Alcott School normals for the same age.....	1,323	704	29,033	180	24.4	1,444
Boys of ungraded room.....	1,362	724	30,880	206		1,762
Average for same age at Alcott School.....	1,378	727	31,888	261	34.6	1,763

We are pleased to know that this work among the school children of Chicago has been so well received that the board of education last year established, as a permanent part of the school system, a department for "School Study and Investigation," with Mr. Smedley, the expert in charge of these investigations, in charge.

THE MENTAL AFFECTIONS OF CHILDREN—IDIOCY, IMBECILITY AND INSANITY by William W. Ireland, M. D., Edin., the second edition of this work (or rather the third counting "Idiocy and imbecility" as the first) has come from the American publishers, P. Blakiston's Son & Co., Philadelphia Penn.

Chapter I is devoted to definitions; chapter II to Statistics and chapter III to Causes. Chapters IV to XVI discuss classification and the classes, to which latter we find two additions since the publication of the original edition, viz., Sclerotic and Syphilitic Idiocy. Chapter XVII treats of the Growth and Mortality of Idiots; chapter XVIII, of Insanity in Children and insane Idiots; chapter XIX, Sensory and Mental Deficiencies; chapter XX, of Methods of Education; chapter XXI, Laws for idiots and chapter XXII, Wolf Boys.

The last chapter is a supplementary rather than an essential part of the work.

The work is an epitome of the present knowledge concerning idiocy. The author has unified and supplemented the results of his own long experience and extensive observatson and reading by the results of the observations of others.

An excellent feature of the work is the copious use of citations and quotations as foot notes. The mechanical work is excellent, the print clear, and the illustrations well selected and of good quality.

The work should be in the library of every physician and the frequent inquiries from teachers for information concerning feeble-minded children would find their answers here.

The JOURNAL bespeaks a good reception for Dr. Ireland's new work on this side of the Atlantic.

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No. 2.

ORIGINAL ARTICLES.

SPECIAL CLASSES FOR MENTALLY DEFECTIVE SCHOOL CHILDREN.

BY WALTER CHANNING, M. D., BROOKLINE, MASS.

TO those interested in provision for the defective classes by the public authorities, the increase of institutions for feeble-minded is a matter for encouragement, and yet as we know, it is a fact that only a very small percentage of this particular class can ever be provided for in this way, as their number is so large and the degrees of feeble-mindedness are so numerous, that no congregate method of care can cover them all.

While we have no means of knowing how many mentally defective children there are in the community, and are not likely to have at present (owing to the unfortunate regulations now being taken), the number much exceeds any estimate so far made, and is increasing. It is certain that there is an increase in insanity and transmissible kinds of organic weakness, which in succeeding generations take the form of some degree of feeble-mindedness. Signs are not wanting that the degeneracy, about which so much has been written in the last few years, is one of the downward steps to imbecility and final extinction.

Feeble-mindedness, unlike an acquired disease, often means a very slight apparent change from the normal, so far as outward appearances are concerned. Like the stunted tree, the stunted mind will make an effort to adapt itself to its environment, and the departure it presents from the normal will not only pass uncorrected, but will hardly be noticed. This is one of the great dangers of mental defect; that it makes so little impression in proportion to its seriousness, that the human race may descend to a lower plane of mental efficiency with hardly an effort made to prevent it. There can therefore be no more important duty for the medical profession and others who devote them-

selves to the training and care of the young, than to study the mental and physical development of young children for the purpose of acquiring a clearer knowledge of the laws which control it, and seeking to discover wherein it may be modified for the better.

Much careful study has been made of the histology and anatomy of the human being from the beginning of its existence. It is pretty well known, for instance, how the brain grows, when the brain and other cells are formed, and how they appear at different periods before birth. And in the same way careful studies have been made of the histology of other portions of the body, and authorities on these subjects can give us extended information upon them. These researches are undoubtedly of great value; but they have not yet taught us how to practically recognize abnormal development of the cortical cells in the first years of life. It is probably too much for us to expect that we can at present, through anatomy or histology, discover such defective development. We must, therefore, by more careful clinical observations than have yet been made, attempt to group together enough symptoms to differentiate the defective from the normal child. The farther back in the child's life we are able to do this with any degree of definiteness, the better our results will be.

It has been the rule to leave the education of the feeble-minded child until he is so old that in many ways it, at best, cannot do as much as it should in the way of supplying deficiencies of the special senses. If it were possible to begin much earlier, we should expect through the more plastic condition of these senses more satisfactory results. We know that the special senses develop rapidly and immediately after birth, and by the time that the child is a year or two old, he already has special sense memories and has begun to correlate by association these memories on the higher intellectual plane.

The sooner then we can begin to train the special senses, the better it will be, for it is through them that we must expect to reach the highest centres. Why should we wait until a child is seven years old instead of beginning several years earlier? Of course it may be said that with the normal child special training of these senses is not necessary, because the ordinary conditions of his environment furnish what he needs, and a special system of education can hardly be arranged to cover only the exceptional children. There is great force in this objection, but it is also true that it should be possible to begin with the feeble minded child earlier than is at present done. How early this will eventually be, we cannot say, but it is to be hoped that the time will be pushed farther and farther back, until, possibly, the child of under three years may be reached.

The kindergarten has done a great deal in this direction, for it has been the means of giving the child object teaching at an early period. For instance, children are sometimes sent to the kindergarten under four years of age and thus receive the first rudiments of "sensorial training" when comparatively very young. It is most desirable that

some method should be devised by which this can be done before the child arrives at the kindergarten age, that is, say, between two and four. It is important for us to seriously consider this matter for it has a direct bearing upon the education of the feeble-minded, not only as a means of developing the defective senses, but also as a means of making an early diagnosis of the defect of development of which they are subject. The better the system of object teaching we have for the very young children, the sooner we shall know what to expect from the normal ones, and the sooner at the same time we shall have our attention attracted to the exceptions. I asked a kindergarten teacher if she would be able to detect feeble-mindedness from three and a half to four, and she unhesitatingly answered that she would. If this is the case, why should advantage not be taken of knowledge which it is evident can be acquired at such an early period? Would it not be well for those engaged in the treatment of feeble-minded to direct a good deal of attention toward perfecting a system for first examining very young children for physical and mental defects, and then, secondly, arranging one for simple object teaching adapted to their needs?

In England and Germany, as we know, special classes in schools for feeble-minded have been for some time in vogue. It is found that about one per cent of all school children are sufficiently backward to class them as "feeble-minded" and requiring special instruction. These children are seven years of age; that is, those who have already reached the first grade in the primary school. "Feeble-minded children are," it is said, "in a great majority of cases, marked by some physical defects discernible by the trained observer. The most conspicuous of such defects are irregularity in general bodily conformation, malformation of the head, the palate, tongue, lips, teeth, and ears, defective power either of motion or control in almost any of the different forms of muscular action, as shown in balance, attitude and movement, and defects in some one or more of the sensory functions. * *

"1. Report of the Departmental Committee on Defective and Epileptic Children. Presented to both houses of Parliament, 1898.

"A child may be abnormal in one or more of these respects, without being necessarily feeble-minded. This is a matter which requires not only medical knowledge, but some medical study. * * * Information can also be obtained as to the child's habits, conduct and power of learning, and generally also as to its history. * * * But when each case has been decided upon its merits, the fact remains that a class of feeble-minded children is also a collection of children physically defective, and consequently their proper treatment in schools depends to a great extent upon medical considerations." The words just quoted we can indorse as true in every way. The study of defects in young children is essentially of a medical character, and should be made one of special investigation. But such being the case, there is no reason why much of this evidence of feeble-mindedness should not be obtainable at a considerably earlier age than seven, which the report regards as the best

one for the child to enter the special class. I cannot see why we should not adopt a period of three or six months after the child has entered the kindergarten, for this purpose. It may not be necessary actually to enter the child in the special class until he is seven, but if we know that at four he is already defective, why should not this special education begin then, instead of waiting three more years? Surely if kindergarten teachers can discover defects at four years, trained medical observers should have no trouble in doing so, and to begin the necessary training three years earlier would be of immense advantage. As the kindergarten is in many respects well adapted for the feeble-minded child, it would seem at first sight that he might be left with other children, but I am quite certain that this ought not to be usually the practice, for even in the kindergarten, as in the higher school grades, it is fair neither to the normal child nor the defective one to endeavor to carry the two along together.

I wish that a committee of the Association of Officers of Institutions for Feeble-Minded Children might be appointed to consider this whole matter of the early investigation of indications of feeble-mindedness in young children, with special reference to children in kindergartens. I believe the result would be to show that there were many children receiving this kind of instruction who were feeble-minded, and who might by some modification in what was taught them be helped much more than they possibly can be now.

While the kindergarten represents what is the most natural method of training for very young children, I believe it is still very far from perfect even for normal ones, and an effort made to modify its treatment for feeble-minded children might indirectly be the means of improving it for the average child. The mistake is made, as in the elementary schools, of laying too much stress upon unimportant details and the principle is still not clearly enough recognized, that groups of the larger muscles like those of the shoulders and the trunk are the ones to be primarily developed, and not those requiring very fine movements of the fingers. It would be found that, with the feeble-minded children, work of this sort would be impossible, and this would lead to reforms, it is to be hoped, in regard to what is done for the average child.

If it is once recognized that feeble-mindedness can be detected with certainty at, we will say, four years of age, when the child has been in the kindergarten for a short period, then it is possible that its presence could be at least inferentially discovered at an earlier age; and then we might find that still greater progress could be made in developing such faculties as it possessed which, though far below what we should expect to find in the normal child, could still be made of more service than they are when its education begins even at four years.

What I wish especially to advocate here is the necessity of special classes for feeble-minded children in connection with the school systems of all cities or towns of any size. In Germany it is compulsory

for municipalities of over twenty thousand to establish such schools. Supposing a school population to be three thousand, this would give thirty requiring special instruction. I am quite certain that the proportion of children who would be benefited by more manual and less intellectual training than is now customary in our schools is far larger than this, and it might be desirable for the special classes to be enlarged so as to include dull and backward children, who probably would eventually catch up with the others, but who could be most advantageously taught in their early years chiefly by the development and use of the special senses. It will probably be a long time before we can get as far as this, but one of the first steps will be the establishment of these special classes for the more marked cases of mental defect.

There is at present some prejudice on the part of the parents in acknowledging that their children are the subjects of defects of any kind, and instances have been brought to my attention where children of feeble mind have arrived at the age of twelve or fifteen without any positive diagnosis having been made, which shows how possible it is for people not to see things they do not wish to see. It is, however, of the highest importance, if we desire to better understand and prevent degeneration of the human species, that we should use every effort to educate the public in that which pertains to abnormal development of children, and I believe that special classes in our schools for the feeble-minded will help to bring about this result, for it will of necessity eventually lead to a careful investigation of the great bulk of all school children.

In some places a system of card cataloguing for keeping the records of the children in the schools has been adopted. Each child has a card which serves as a record of his condition and of his progress, and follows him from the beginning to the end of his school career. As a part of this record there should be included a statement of his mental and physical condition, which should be carefully examined into when he first enters school. If this is at the kindergarten age, which the writer hopes will not be later than four years, it may call attention to such indication of backward mental development as exists, and be the means of making the first diagnosis of feeble-mindedness. It may be some time, however, before the average medical examiner will be in possession of the necessary criteria upon which he can rely to make a diagnosis of mental defect.

It is probable, as I have already said, that we must begin to first advocate special classes for children in the primary schools. Assuming that this system has been adopted, the first step, if we follow the English plan, and it may be the best at the start, will be to have the teachers call attention to children they consider defective. The following blank for the teacher is one which I have adapted from the one recommended by the English Committee in the report already referred to, and it may in the beginning be available for the purpose.

TEACHER'S REPORT ON THE MENTAL CONDITION OF A BACKWARD PUPIL.

1. Name of the child, school and address.
2. Age.
3. How long has the child attended school?
4. What is the appearance of the child, stupid or bright?
5. Is the child: (a) Obedient; (b) mischievous?
6. Are the habits of the child correct and cleanly?
7. What is the mental capacity of the child?

(a) Observation.	(f) Writing.
(b) Imitation.	(g) Calculation.
(c) Attention.	(h) Color.
(d) Memory.	(i) Special tastes.
(e) Reading.	
8. Is the child affectionate or otherwise?
9. Has the child any moral sense?
10. Have you any other information bearing on the case?

Signed,

School,

Date.

N. B. The teacher is requested to give as accurate and full replies to the questions as possible.

It is somewhat questionable if it is ultimately desirable to have the teacher take the initiative, as a competent medical inspector after he had made a careful examination of the child on entering the school would be able to form an opinion earlier even than the teacher, but where he does not have the opportunity it must be left to her. She, of course, would make her return to the superintendent of schools, and then after the children's parents had been notified and their consent obtained, the next step would be to have the medical examination made by the regular medical school inspector and an expert in the treatment of the feeble-minded. It is probable that there would be considerable opposition by parents to any such course as this in the beginning, but as it would be for their own benefit and also for the benefit of their children, it would seem in the end that it must inevitably be adopted, and it is, at any rate, the duty of those who understand the necessities of the case to be very strenuous in their insistence on the importance of these special classes.

It is not my object in this brief paper to go into details of the organization of these classes, nor how the medical examination shall be made. That can be done later, but I wish here to urge the importance not only of having teachers for the classes who have had experience in the elementary school and kindergarten, but who have, furthermore, had special training in the schools for feeble-minded, for a period of at least one year. The number of feeble-minded children is now so large, that it appears to me the time has come for the regular training of teachers to take charge of them. Perhaps only one or two training

schools for this purpose need to be started to begin with, and with a very small number of students, but I believe no greater service to the community can be rendered than the preparation of a few teachers in the way I suggest. We have in Massachusetts a most admirable school for feeble-minded. I wish that in connection with this a training department might be established; that is, that teachers from public and private schools would agree to take a course, under the direction of the superintendent, in all departments of the school for a period of perhaps two years, serving for small salaries as is the case in training schools for nurses in hospitals. I have no doubt that such a plan may already have been thought of and very possibly discussed, but it is, at any rate, worthy of further consideration, and will be almost a necessity in case many cities adopt the plan of special classes.



THE CASE OF JOHN—MONGOLIAN TYPE.

MISS FANNIE KING, ORANGE, N. J.

TEN years ago last December John entered the Seguin School as a day pupil. He was then six years old, tiny for his age, and was most unprepossessing because of his rough skin, inflamed eyelids, open mouth and constant drooling. He could not talk and comprehended very little. He remained in the school but five months, and as during that time he had been brought each day for but one hour's work, very little had been accomplished.

After leaving nothing was heard from him until last September, when his parents again wished to place him in the school. His age debarred him from entrance, but his mother's entreaties finally overruled all objections.

A year ago last winter he went each day to a parochial school (he is a Roman Catholic), but although the Sisters had worked patiently and faithfully with him, they had failed to interest or advance him. Previous to this he had gone for a time to a kindergarten. His parents did not feel that he had gained there, but the training had undoubtedly benefited him, for he uses his hands well.

Upon examination last September it was found that he comprehended any language which one would think of addressing to him, and could make himself understood, though he used very few words and these came out with great difficulty, because of his faulty articulation and stammering. He could not give the sounds of "th, ch, sh, j." and "z," left off all final consonants, and did not give "s" in combinations of "st, sp, sl," etc. His mouth was still open, but the drooling had ceased.

Although entirely untrained and without the least knowledge of

the first principles of reading, writing and numbers, yet he had gained considerable practical knowledge from playing with other boys at home, and was fairly well able to take care of himself and his possessions. He could dress himself, but would not willingly bathe—would not even wash his face and hands—and protested against its being done for him. When told that it was time to use a tooth brush, he had a way of saying, "O, never mind," which was so conclusive that it often admitted of no argument. Now, at the end of nine months, he is given a shower bath every morning to his great delight, and he never omits brushing his teeth night and morning.

Physically he was strong with well developed muscles, but was short and round shouldered. When he had been in school a month he was examined by an orthopedic physician, and the following diagnosis was given:

"Heart—normal; lungs—normal; malformed chest; scoliosis; some rotation to right; distance between scapulæ uneven; strength of hands—right hand, 47 lbs., left hand, 45 lbs.; partial flat foot—use instep supporters. Give abdominal work; widen and deepen chest; work to point of perspiration if possible."

John detested the instep supporters and would not wear them unless watched. He also disliked a pair of new shoes which were bought for him soon after he came, and which he wore alternately with an old pair. They fitted well, but he objected to the stiffness, and often threatened to "put 'em in 's-s-spress package an' s-s-sen' 'em home C. O. D., an get c-c-c-crutches." One night his old pair had been put outside his door to be blackened, and his new pair had been gotten out ready for use in the morning. Two hours later John was found fast asleep, with his old shoes safely hidden under the bedclothes. He had quietly gotten out of bed and secured them, hoping thus to insure comfort for the morrow.

We found him to be very mischievous and destructive, with a mania for collecting screws, bolts, nails, keys, etc. At Christmas he was given a watch and at the end of a week there was nothing left but the case. He had taken it entirely apart. He has a bicycle and can ride well, but as a result of his destructiveness, it is in the repair shop more than half the time.

He requires but a few moments for an act of mischief, and although closely watched, occasionally finds an opportunity for wrong-doing. Once he turned off the water which supplied the boiler of one of our steam heaters, and it was discovered just in time to prevent an accident. Another time the water was suddenly shut off from the house, except on the street floor and we were unable to discover the cause. As it was a legal holiday we could not get a plumber until the following morning, when it was found that there was nothing wrong with the pipes, but that some one had deliberately turned off the water. Only John could have done this. We did not dare correct him for fear of so impressing the occurrence upon his mind that he would be tempted to do these

things more frequently. All we could do was to watch him even more closely than before.

The following order of exercises was made out for John the day after he entered school, and we began work:

9:00 a. m.—Kindergarten: Songs and games.	1:00 p. m.—Numbers.
9:20 a. m.—Corrective gymnastics.	1:20 p. m.—Clay modeling or drawing.
9:40 a. m.—Wood work.	1:40 p. m.—Articulation and language.
10:00 a. m.—Numbers.	2:00 p. m.—Writing.
10:20 a. m.—Music lesson.	2:20 p. m.—Educational gymnastics.
10:40 a. m.—Basket making.	2:40 p. m.—Dancing.
11:00 a. m.—Reading.	
11:20 a. m.—Writing.	
11:40 a. m.—Calisthenics.	

He worked with eight different teachers in as many different rooms, but even this variety was not sufficient to interest him. Great patience and tact were required on the part of the teachers. At times all efforts failed and John would remain sullen and moody for hours—silent except for an occasional oath. He resented the confinement, and seized every opportunity to run out of doors. Frequently he would lock himself in a room and would then examine the contents of the bureau drawers and closets, appropriating for his own use anything which pleased his fancy.

Gradually he became interested in his school work, but nearly three months had passed before he willingly went from one teacher to another without trying to escape. Now he is eager to work, enthusiastic, ambitious, and as a rule, painstaking. His disposition has become almost sunny, and the whole expression of his face has changed. In time this newly developed trait of cheerfulness will so grow upon him as to become characteristic, but as yet it is not more than well ingrafted into his nature, and its growth will depend upon his environment. If we failed to keep him happy and to make his work interesting, he would undoubtedly fall back into his former morose condition within a month. He still has occasional outbursts of temper and needs judicious management. We recognize the fact that we are working with explosive material, and are most careful not to antagonize him.

On Oct. 3, four weeks after entering school, John was weighed and his measurements were taken. He was again weighed and measured on May 15, 1900.

The following reports were given:

	Oct. 3, 1899.	May 15, 1900.
Weight - - - - -	95 pounds	99½ pounds
Height—Standing - - - - -	56¼ inches	56¾ inches
Height—Sitting - - - - -	31½ inches	31⅞ inches
HEAD MEASUREMENTS.		
CIRCUMFERENCE—		
Taken above ears and over occipital tuberosity	504 Millimeters	506 Millimeters
TRANSVERSE—		
[a] Tape measure from ear to ear over vertex	333 “	335 “

[b] Calliper measure from ear to ear over vertex					110 Millimeters		110 Millimeters	
LONGITUDINAL—								
[c]. Tape measure from nasal notch to occipital tuberosity					310	"	313	"
[d] Calliper measure from nasal notch to occipital tuberosity					160	"	165	"
GIRTH.								
Neck	-	-	-	-	328	"	335	"
Chest, in repose	-	-	-	-	777	"	805	"
Chest, full	-	-	-	-	808	"	820	"
Chest, empty	-	-	-	-	747	"	765	"
Ninth rib, in repose	-	-	-	-	703	"	720	"
Ninth rib, full	-	-	-	-	720	"	750	"
Waist	-	-	-	-	656	"	660	"
Hips	-	-	-	-	789	"	798	"
					Right	Left	Right	Left
Thigh	-	-	-	-	487mm.	485mm.	496mm.	495mm.
Knee	-	-	-	-	310	"	318	"
Calf	-	-	-	-	316	"	335	"
Ankle	-	-	-	-	206	"	210	"
Instep	-	-	-	-	220	"	226	"
Upper arm	-	-	-	-	225	"	238	"
Forearm	-	-	-	-	227	"	230	"
Wrist	-	-	-	-	145	"	149	"
Hand	-	-	-	-	184	"	180	"
LENGTH.								
Leg, ant. sup. spine to inter. malleolus					740	"	747	"
CAPACITY.								
Lungs					120 cubic inch.		152 cubic inch.	
BREADTH.								
Neck	-	-	-	-	110 Millimeters		105 Millimeters	
Shoulders	-	-	-	-	330	"	335	"
Chest	-	-	-	-	240	"	245	"
Waist	-	-	-	-	220	"	220	"
Hips	-	-	-	-	270	"	265	"
DEPTH.								
Chest	-	-	-	-	170	"	175	"
Abdomen	-	-	-	-	172	"	170	"

On comparing the above reports, it will be seen that there has been considerable physical gain. John is fond of his gymnastic work and enters into it with spirit, quite frequently practicing the exercises by himself out of school hours.

John's mother was anxious that he should have music lessons, but he disliked the drudgery, and during the first few weeks was unwilling to spend more than five minutes a day at the piano. After a month's trial the lessons were given up for a time. He then pleaded for an accordion, so one was bought for him. He was delighted with it and worked diligently until he was able to play a few measures of "Home Sweet Home," his favorite song. We then proposed that he learn to

play this on the piano. The proposition met with his approval and since then he has not rebelled against the daily lesson. He has learned a number of five finger exercises and a few simple duets, chief of which is "Home, Sweet Home." He will never learn to play by note, but the slight knowledge already gained is even now a great pleasure to him. He spends many odd minutes at the piano which a few months ago would have been given up to mischief.

John had been taught nearly all of the letters before he came to us, but he did not know any printed words. We found that when a short word was spelled for him, he could usually pronounce it, but he himself could not name the letters quickly enough to catch the combination of sounds. We began to teach him by the word method, and the result has been satisfactory. He has mastered several primers, and now has a first reader. His defective articulation has been entirely corrected, but he still stammers.

He did not know any script letters and could not copy any one of them. He now knows and can copy every letter, and has learned to write ten from dictation.

Last September John knew nothing of color. In four months he had learned the primary and secondary colors through work with colored pencils, and we substituted for this the J. Liberty Tadd system of drawing, alternating with clay modeling. He was not interested in the drawing and has made little progress with it, but he liked the modeling, and although he had absolutely no idea of form, was glad to experiment with the clay. Now, at the end of five months, he can make many simple forms.

John takes pride in his woodwork, and uses the chisel, brace and bit, and plane with little help. He saws vigorously, but although lines are ruled for him, is not yet able to keep the saw straight, inclining it much to the left.

He has learned to make baskets of rattan, having help only in starting and shaping them.

We have taught him to dance the Virginia Reel, the lancers, the two-step and the polka, and this accomplishment affords him the keenest pleasure.

The following reports given by the number of teachers show his progress in that work:

"SEPTEMBER 29, 1899. *Arabics*—Knows names of all digits but has little idea of their values above three. Writes them fairly well, but cannot count accurately above four.

"*Coins*—Has some idea of the value of the three small coins.

"Much practice has been given in counting a variety of objects. Has difficulty in answering such questions as, 'How many hands have you?' 'How many feet has a cat?' etc."

John would answer these questions without giving the least thought. Once when asked, "How many legs has a dog?" he answered, "Three." "Why, John," said the teacher, "how could a dog walk with only three

legs?" "Walk lame!" was the immediate reply.

One day after he had become interested in his number work we overheard him drilling himself in his room at the close of school. "Now count shoes," he said, "one shoe—two shoes—hm—m—good boy!" (the last in exact imitation of his teacher's tone and expression.) "Now count chairs—hm—m—one chair—two chairs—three chairs. Good boy—very good boy!" This was kept up for a half hour when we thought it better to interrupt the drill and send him out of doors.

His second number report is as follows:

"NOVEMBER 29, 1899. *Arabics*—Has daily practice in writing and counting to eight, aiming to teach relative positions and values.

"*Coins*—Has practice in buying small articles, the cost of which does not exceed five cents.

"*Addition*—Some concrete work with coins has been given. Has made a beginning with written abstract addition.

"FEBRUARY 28, 1900. *Arabics*—Reads and writes to ten.

"*Roman Notation*—Reads and writes to IV.

"*Coins*—Buys small articles, paying for same, when value does not exceed ten cents.

"*Addition*—Has written work with aid of objects.

"MAY 15, 1900. *Arabics*—Reads and writes to sixteen. Has a fair idea of the relative positions of the digits and can illustrate their values with coins, balls, or other objects.

"*Roman Notation*—Writes to VI from memory and reads to VII from dial.

"*Ordinals*—Has had practice to fifteenth on calendar.

"*Coins*—Counts and arranges in simplest combinations to fifteen cents inclusive.

"*Addition*—Has memorized six of the easier combinations and does written and oral work in all the combinations, the sums of which do not exceed six.

"The written work consists mainly in obtaining answers to written combinations by arranging objects to illustrate same, and in writing combinations from objects arranged by teacher.

"Has had much practice in buying small articles when cost does not exceed fifteen cents."

Now that a foundation has been laid, the work of further developing the aroused faculties will not be difficult. John's life is far happier than it was nine months ago. His time is fully and pleasantly occupied and the hopeless, sullen expression which came from a dull sense of his utter uselessness to himself as well as to others has changed to one of happiness and animation. He has begun to realize that it is in his power to please those about him through doing to the best of his limited ability the work which is given him.

It seems almost criminal that a boy, who in nine months is capable of such improvement under proper conditions, should have been de-

prived of training for so long a time. For ten years his parents had known that there were schools for the training of children of arrested mental development, yet they were so selfishly fond of him that they were unwilling to bear the separation consequent upon sending him from home. They did him a wrong, the enormity of which they are just beginning to realize. Parents who are ignorant of the existence of such schools may be forgiven, but what shall be said of those who, through mere sentiment, fail to give their children the training which would make them less a burden upon the community?



MOTOR ABILITY AND CONTROL OF THE FEEBLE-MINDED.

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THE remarks of observers on these subjects have been on their more complex manifestations, as walking, writing, working or employment in the trades. They have set forth their delay in walking, their awkward gait and their inefficiency in writing and work, producing poor and badly formed results, which normally would be ascribed to lack of attention and discrimination, and in all a general laziness.

Special talents for the production of a particular thing are frequently found but show results of no economic value. Paralyses due to lesions of brain or cord are frequently found as insurmountable hindrances to any further advance. Automatic instinctive movements will be considered under another head as we shall have occasion to remark again.

These are of value but they have to do with complex processes which call into play most of the powers of the mind. For purposes of study and investigation it is necessary to give the problems a simpler form. On this, so far as it has to do with the muscle sense, we have already had occasion to offer some remarks. Having now to do with voluntary motions, we will consider steadiness, the sense of locality as determined by active touch, motor ability as determined by taps with the consequent question of fatigue, and the grip of the hands.

STEADINESS.

The apparatus used to test the muscular control or steadiness was that devised by Scripture. "It consists of a flat block of hard rubber supported vertically by a rod. On the face of the block is a strip of brass in which there are five hard rubber circles 1, 2, 3, 4 and 5 mm. in diameter. Electrical connection is made by a binding-post at the back. The edges of the circles are flush with the brass." A long metallic needle set in a handle connected with a flexible conductor was used as a pointer. An electric bell introduced into the circuit indicated any

contact of the needle with the brass.

The arm of the child was supported on a Sanford arm-rest. He held the balanced needle like a lead pencil and touched the circles in order, beginning with the largest. Five trials, one for each circle, constituted a test. Two tests of each hand were made at a sitting and there were four sittings at intervals of several days. If the child missed a circle at the first attempt, he repeated until the circle was touched. The circles were valued inversely as the squares of their diameters or 1, 4, 9, 16 and 25.

There were thirty-five boys and thirty-three girls tested. For the boys the average for the right hand was 11.8 ± 5.3 , for the left hand 10.1 ± 3.8 . For the girls the average for the right hand was 9.0 ± 4.4 , for the left hand 8.4 ± 5.0 . All of the children were right handed. Three of the girls tested were not able to perform the test.

Both boys and girls had better control of the right hand than of the left. The boys exceeded the girls, however, in the control of both hands. The mean variation was about the same for both boys and girls, but it was larger for the right hand of the boys and the left of the girls.

Grouping the children according to ages gave no indication of any dependence of muscular control upon age.

Dividing the children into three groups, A, B, C, according to their mental ability as estimated by one of their teachers we have the following averages:

BOYS			GIRLS		
No.	Right	Left	No.	Right	Left
A 11	13.8	13.0	8	15.0	15.9
B 15	12.4	8.9	12	7.8	6.6
C 20	7.8	6.8	16	4.9	2.7

This shows that there is a direct dependence of muscular control upon mental ability; the brightest children have the best control and also show less difference between their right and left hands.

Scripture, who made some similar experiments investigating the subject of education of muscular control, concludes that the "training seems to be of a psychical rather than of a physical order and to lie principally in the steadiness of attention. For any distraction of attention due to noise or other disturbances invariably lowered the per cent of steadiness. Concentration of attention upon the muscular movement to be performed was unfavorable, but fixation of attention upon the objective point to be reached by the needle was productive of the best results." In our experiments with those of lower grade, this seemed to be the most difficult thing, to fix the point to be reached. "Either mental or bodily fatigue, particularly of the eye muscles, lowered the results."

Since the attempt has been made to classify the feeble-minded

according to the degree of attention manifested, these remarks have an important bearing in this direction. And perhaps this test might have some value as a means of diagnosis.

LOCALITY.

In order to test the direction of motion from touch stimuli the children were subjected to the following test. They were touched on the back of the left hand with the point of a common lead pencil. They were then required to immediately touch the same spot with a pencil held in the right hand, the eyes being closed during the whole proceeding. The distance and direction from the original spot were then noted. The results were:

	BOYS	GIRLS
Number	30	24
Average	11.2	10.5
Mean Var.	5.0	4.3

Judgment:

Good	16	23
Bad	4	1

The boys placed the pencil more frequently toward the fingers, the girls toward the forearm.

Two of the boys examined could not touch the same point with the eyes open by an average error of 2mm.; also thirteen girls with an average error of 3mm. (max. 5, min. 1).

Grouping the children according to mental ability, A being the brightest, we have:

	BOYS	GIRLS
A	9.5±4.3	11.1±4.9
B	11.1±5.0	11.4±4.3
C	12.3±6.7	8.4±3.4

With the boys we find that exactness of touch increases with mental ability, while with the girls there is no such indication. The results from a relatively large number of girls were thrown out because they could not properly fix the point with the eyes open.

The smallest distance on the wrist in which two points can be felt as two has been found among Washington school children to be, for the boys 15.5 mm. and for the girls 14.9 mm.* The distance usually given in the books for the back of the hand is 31.6 mm., and for children twelve years old 22.6 mm.

Our results from the steadiness reaction correspond to a circle of about 3mm. in diameter, showing greater error in direction of motion from touch stimuli.

The same difficulty and hence source of error was shown here much more plainly than in the steadiness reaction, that is, the difficulty of

*Report of the Commissioner of Education, 1897-98.

fixing the point to be touched. As we have shown, a number were unable to do this even with the eyes open although responding readily to the test. This error was practically definite for each child. Hence the lack of attention in this case is clearly a lack of adjustment of the organism to the point of stimulation.

MOTOR ABILITY AND FATIGUE.

These tests were made according to the method which Gilbert used on school children in Connecticut.* His results were used for comparison.

The children were required to tap as rapidly as possible on a telegraph key for forty-five seconds. It was so arranged that these taps were recorded on a rotating smoked surface by means of a telegraph sounder. The taps during the first five and last five seconds only were recorded. The time was taken from the metronome, and by means of a switch the electric current was made and broken at the proper intervals.

Thirty-eight boys and fifty-seven girls among the school children were tested. Of these, fourteen girls (1 A, 4 B, 9 C) and five boys (C) showed no fatigue. This was due to a slow or irregular first reading. Fully half of those taking the test showed some sort of irregularity. This was looked upon as the normal condition with them so the results were not thrown out.

The readings for each child were compared with the normal for his age and the difference noted. For thirty-three boys the number of taps which they were able to make in five seconds was found to be 8.4 less than normal (31.5), with a mean variation of 3.5. For forty-three girls the average was 7.2 less than the normal (29.6) with a mean variation of 3.1.

The fatigue was measured by the per cent of loss in the number of taps made in the last five seconds. For thirty-three boys the average was 1.4 less than normal (18.0) with a mean variation of 7.6. For the girls the average did not differ from the normal (16.6) with a mean variation of 6.1.

Those children who tapped the fastest, coming nearest the normal, generally showed the greatest fatigue, although there were marked exceptions.

Grouping our results according to mental ability we have:

	TAPS	FAT.	MAX.	MIN.
Boys A	-3.0	-1.3	+14.3	-8.9
B	-7.1	-1.0	+13.3	-13.0
C	-11.9	-1.5	+17.0	-10.0
Girls A	-6.1	-2.5	+12.5	-8.2
B	-9.0	-0.2	+17.5	-7.3
C	-6.4	-1.2	+12.5	-11.0

* Studies from Yale Psycholog. Lab., Vol. II, p. 64.

The ability to tap decreases with the lack of mental ability.

This is particularly striking among the boys. Fatigue seems to depend upon the rate of tapping and not upon the speed of the individual, at least for the slower speeds. This is also shown by the fact mentioned above, that with some of the children there was no fatigue indicated, and in some cases the number of taps was increased at the end of the tapping time. Hence we can argue that the deficiency is nervous rather than muscular. Their will power was not sufficient to produce a rate of tapping which would show fatigue in the time indicated.

Hence we conclude that there is a slow and weakened motor ability with increased fatigue among the feeble-minded.

HAND GRASP.

In order to determine in a way the strength of feeble-minded children as compared with the normal, we made an investigation concerning their strength of hand grasp. For this purpose we made use of a Carroll Dynamometer, correcting the reading of the scale for each child.

For a standard of comparison we made use of the measurements of normal children made by Ada Carman in the schools of Saginaw, Mich.

Of the forty four boys and forty-two girls tested, only twenty-two of each were within the ages named of the normal school children. Comparing each age with that of the normal children and averaging the differences we have:

	RIGHT HAND	LEFT HAND
Boys.	-26.7 lbs.	-20.8 lbs.
Girls.	-17.0 "	-13.5 "

To such an extent do we find the grasp of our children subnormal. Averaging the results of our children whose ages were above those given of the normal children (19 yrs.) we have:

	RIGHT HAND	LEFT HAND
Boys	56±3.2	56±3.3
Girls	31±1.7	29±1.4

These results are in pounds and correspond to the strength of grasp of a normal boy of fourteen years and of a girl of about twelve years. The average mean variation for all of the children was:

	RIGHT	LEFT
Boys	2.2	2.7
Girls	2.1	2.0

This is lower than usual with measurements of the feeble-minded. Grouping the children according to mental ability we have:

	BOYS			GIRLS		
	Right	Left	Age	Right	Left	Age
A	61.4	56.4	17	39.9	36.5	20
B	60.7	53.5	22	36.7	34.4	22
C	48.3	47.3	20	33.6	32.7	20

This shows that the strength of grasp depends upon mental ability. We have indicated the average age for each group, and so far as it enters in the result it would tend to favor the duller groups. Wishing to see how far this held good, we made comparison of the grasp, weight and height of feeble-minded children with normal children and we found them subnormal in the following amounts:

	GRIP.		WEIGHT.	HEIGHT.
	Right	Left		
Boys, subnormal	51.7°/。	52.4°/。	13.7°/。	5.5°/。
Girls, subnormal	46.2°/。	44.2°/。	12.3°/。	7.5°/。

Thus taking the weight and height as an index of muscular development, we conclude that fully three-fourths of the deficiency in muscular power must be due to some central defect, as lack of nerve power or will power.

The chief difference between nervous impulses is in the amount of energy set free. And the strength of the nerve impulses, other things being equal, depends on the strength of the stimulus.* This is easily demonstrated in the nerve-muscle preparation, where the amount of contraction, within certain limits, is determined by the strength of the induction shock. So with our children the deficiency in the nerve impulses and the lack of nerve stimuli must be considered in the explanation of their deficiency of muscular power. In mental fatigue we find the same conditions, a lack of muscular power which is ultimately due to lack of nervous impulses.† Hence can we conclude that the feeble-minded are in a state of permanent nerve fatigue due to early nutritional disorders?

Mentally the process of willing is accomplished when we hold in mind an idea to which we agree. Deliberation is the process of determining which idea shall be dominant, but this ended the resultant idea fills the mind and the action occurs. Oftentimes we will with effort; here in addition to the idea we have the mental picture of muscular strain which is thereby also willed.

The relation of the dominant idea to the nervous impulse is unknown. Normally the one follows the other, but in paralysis the nerve impulse does not result from the dominant idea. In fact, the strength of the nerve impulse varies in people from the superstrength of the energetic, strongly reacting people, through the medium reaction of the imbecile, down to the total lack of the same in idiocy and abulia.

While there is no doubt a variability within certain limits between the strength of the willed idea and the nervous impulse, yet from our studies along these lines we would expect a certain correlation between them. And from a weak nerve impulse we would expect a weakness or haziness of the willed idea. This can be deduced from the diminution of attention, the extreme of which is a state of distraction in which no

*Foster: Physiology, Vol. I, p. 139.

†Mosso: La Fatigue.

idea rules the content of consciousness but all seem to be of equal importance. This diminution of attention is in part at least due to lack of association which prevents the idea from developing (a very necessary thing for attention), which can be traced back to defective brain structure.

Consequently we conclude that among the feeble-minded we have a defective willed idea from lack of attention and association, also a defective idea of effort, as well as a weak nervous impulse. We have also found that the girls are weaker than the boys, that the left hand is weaker than the right, that all were right handed, that they were about one-half as strong as normal children of the same age, and that this difference is in great part central.

As the result of all these studies we have found deficient muscular control which varies according to the mental ability, a dull sense of locality, a deficient motor ability with increased fatigue depending upon the rate of work, and a deficient strength of grasp which is chiefly due to central causes.



INSTITUTION CONSTRUCTION AND ORGANIZATION.

BY A. W. WILMARTH, M. D., CHIPPEWA FALLS, WIS.

IT IS not my object in furnishing this paper to endeavor to teach the members of the Association. Many of them are older in experience than myself, and the most of them are as well, if not better able to form judgment on the points dealt with in this paper. This subject was taken up many years ago in the infancy of our Association. Many of the rules laid down at that time are equally in force at present. A riper experience, however, should have given us new ideas, and it is my wish to present the present views in regard to the construction and organization of the institution adapted to our work, so far as I am able to see them. If you find nothing of valuable information in this paper; it may at least furnish a subject for criticism, and possibly for profitable discussion.

The location is always the first subject for consideration. I think it will be universally conceded that a site not too far from some large commercial center is preferable. If too near, the institution is subject to so many visitations as to interfere seriously with the household work. If too far off from any large city, transportation becomes so costly as to increase very materially the running expenses of the institution. A distance of from twenty to fifty miles should be reasonably free from either of these objections, and at this distance land is cheaper than it is too near a large city. An abundant supply of good water is of course necessary, and it is a particularly difficult task to persuade a

commission or board of trustees in regard to the enormous amount of water needed by institutions of this kind. Another point to be taken into consideration is the tendency of our charges to fall victims to disease, and the location should be situated from a sanitary point of view, and situations should be avoided which are favorable to the development of phthisis and kindred lung disorders. A site should further be selected where buildings for custodial cases may be placed at a considerable distance from railroad stations, or passing trains, that the various noises from our excitable cases may not disturb passers by and be misconstrued as evidence of cruelty and suffering.

The question of how much land should be required is the next to meet us. An acre to an inmate seems none too much. To carry out the idea of the institution being a partially self-supporting community, the farm must be a very essential feature in its organization. With a population of one thousand it is safe to say that half, or more, of a thousand acres can be profitably utilized as farm and pasture, the exact amount depending largely on the fertility of the soil. A large park including roomy playgrounds should inclose the buildings, so that the children who make the institution their home should have sufficient room to make them feel that there is no confinement. The high grade imbecile boy is closely akin to a tramp in his instincts. He resents and chafes under anything like restraint. Sufficient room to gratify in a measure his nomadic instincts will do much to prevent elopement. For sewage distribution and various purposes the remainder of the land will be well utilized as the institution grows. More than that, with large grounds the important point is gained that unpleasant neighbors cannot encroach too near the institution.

As to the number of inmates to fill the institution, I am inclined to think that the number should not exceed one thousand. Hospitals for the insane are successfully conducted with double this number of inmates. I am convinced, however, that the institution for the feeble-minded presents a larger number of details for the attention of the superintendent, combining as it does the character of both school and hospital, than do institutions for the insane. Possibly men could be found to successfully conduct an institution for the feeble-minded with fifteen hundred charges, but they would not enjoy many holidays. I once heard a superintendent assert that he could conduct a hospital with five thousand insane, but his friends never shared his magnificent estimate of his own ability.

In the erection of the institution, the old type of enormously large buildings appears to have given way to groups of smaller buildings, or cottages, either cornered on to each other, or separated by a definite distance. The former method is much more convenient in effecting an easy communication between different departments, but has a disadvantage in aiding the spread of flames from section to section in case of fire. It is no doubt safer to separate the different sections a reason-

able distance, say fifty to seventy-five feet. This gives a better chance to prevent the spread of flames beyond the building attacked, and may prove a very desirable obstacle to too ready communication between the occupants of different grades which is not always beneficial. I do not think any one will dispute the advisability of separating the custodial buildings with their often noisy occupants to a considerable distance from the school department, where this is practicable. Covered ways can be constructed at a very reasonable cost to protect from the weather in passing between the sections.

Aside from the administration building, structures need not be built above two stories in height. It is some saving in expense to put on the third story, but it makes many steps to climb, and exit in case of fire is not nearly so easy and safe as in a two story structure.

The material for building is a matter for local consideration. Only extreme necessity should dictate buildings of wood.

The walls should be built with good air spaces extending throughout to insure against dampness. The amount of window space should be large to admit abundance of light, even though this does largely increase the expense of heating. The roof should be covered with some non-combustible material. For partitions in upper floors, which are not to extend to the basement, there is probably no better material than three-inch mackolite, covered with adamant plaster. This makes a light, very strong partition; which is fire proof and a poor conductor of sound. One-inch mackolite makes an excellent material to lay under the floors and cover the ceiling with previous to plastering. For floors in living rooms, hard maple appears to be the best material, the sole objection being that it mars so easily and shows marks so plainly. In bath rooms and other places where much water is liable to be spilled, encaustic tile on a base of hollow tile appears to be the best material.

Fully as important as the structure of the buildings themselves are the heating, lighting and ventilation. While an ideal method of heating would be the electric current, the cost of this method makes it impracticable. We therefore depend upon steam almost exclusively. This can now, thanks to modern methods of surrounding the pipes with non-conducting material, be carried to almost any reasonable distance with very little loss. At the Wisconsin institution the steam line is over two thousand feet long, and one pound pressure in very mild weather secures circulation. It is desirable, however, where low pressure is carried that the supply pipes be larger on these long lines. Within the building, heat and ventilation become so inseparably connected, that they can be spoken of together. The model method of steam heating is undoubtedly by indirect coils. Here all the air entering over the radiators is pure, unused air. This is expensive in the northern states as much of the radiated heat is lost, and the air has to be raised in mid-winter from sixty to one hundred degrees to secure a proper temperature for the living rooms. This means the condensation of a great deal of steam. We therefore combine direct with indirect radiation in

about equal proportion, to get the most economical heating combined with sufficient ventilation. The position of the heating and ventilating flues is also to be considered. It is a matter of convenience in building to place them together, the theory in such case being that the heat will pass along the ceiling, down the opposite wall, and out at the exit. This may work satisfactorily in a room heated by indirects alone. Where there are direct heaters in the room, the air rising from them is certain to be hotter than that from the indirects, as with the same steam pressure they work on warmer air than that coming from the outside. This hot air interferes with the intended circulation, and causes it to short circuit, so to speak. This fault can be easily helped by a small electric fan, requiring about the same current necessary to run a sixteen candle power lamp. This is secured to the ceiling at the opposite end of the room from the inlet, and set to drive the air current away from the heating flue. It will be found to displace a very large quantity of air. Flues should be large. In buildings for custodial cases, especially, not less than two thousand cubic feet per inmate should be supplied each hour. The capacity of this class for fouling the air of a room is something to be wondered at. Rooms for better grade cases need less.

There is little to say on the matter of electric lighting, yet one point may be worth mentioning. The use of the ordinary 110 volt current means a considerable cost in cable and small wire, where the current has to be transmitted to any considerable distance. A considerable saving may be effected by using a 220 volt current. Lamps and other ordinary electrical apparatus are now made for this current, which appear fully as serviceable as those for the 110 volt, and it is in every other way so far as we have been able to determine, equally satisfactory.

I presume it is hardly necessary to advocate the use of the congregate dining room. Its advantages have been too thoroughly demonstrated.

The question of disposal of sewerage is a most serious one, especially in the more closely settled districts, where its discharge into running streams may threaten the health of communities living below, and possibly drawing their water supply from such stream. So far as the safety of the institution is concerned, probably no better method could be devised than the discharge of sewerage into running water, and its entire removal from the vicinity of the institution. Where insuperable objections exist to this process, other methods of disposal must be sought. The method advocated by the late Col. Waring, of discharging sewerage upon the land, stands as one of the best of the other processes of disposal. In order to do this a considerable tract of land must be available. On this it may be distributed through a series of ditches by continuous flow, or what I believe to be better, it may be discharged into a receiving tank. From this tank a siphon with a large discharge pipe may be arranged to distribute it on the land. It will be found that this tank is not liable to get foul if not made too large, so

that it may be discharged two or three times in the twenty-four hours. If, however, odors should arise its walls may be easily dressed with some disinfectant as needed. A by way pipe can be run from the entering pipe around the tank into the discharge pipe, avoiding the siphon so that the water discharged into the tank can be completely shut off during the process of disinfection. The soil tends to become saturated after a certain period, and it is better to have alternate fields which can be irrigated, or shut off as desired, so as to get the growing vegetation to take up the surplus organic matter. No definite rule can be established as to the amount of surface required, as sand land will readily absorb a large amount before alternating is needed, while clay land needs frequent change. Other processes are in vogue, and patented devices can be had for filtering sewerage and burning refuse. I have described somewhat in detail the irrigating system for the reason that where thoroughly effective it is very inexpensive after the first plant is established.

In regard to the arrangement of the plumbing apparatus inside the building as well as outside, the utmost watchfulness is required. Serious blunders will often be made by seemingly well informed men in this particular. Traps are omitted where they should be placed. While the ventilation of sewers through the roof is an admirable measure, care should be taken that the escape pipe should be so placed as not to be near an open window. In the hot, sultry nights of summer when the air is exceedingly light, sewer gas escaping from these roof openings will frequently drop. I have seen such serious results seemingly from errors committed in this connection, that I ask your patience for a brief time to detail one or two instances. I have knowledge of an institution where serious attacks of dysentery occurred summer after summer, without the cause being ascertained. These generally started in one particular room of the institution and shortly afterwards appeared elsewhere throughout the different buildings. The disease was generally of the most severe type and resulted frequently fatally. After two or three years something very significant was noted. Around the building most affected, on hot still nights an exceedingly foul odor could be detected. Around the porches of a one story building, the odor was so pronounced and so offensive as to call inquiry. On smelling around the building it was perceived that it started from an eave spout. The writer placed his nose at a broken portion of the spout, and was nearly knocked down for his pains by the exceedingly foul odor that came through the broken portion. It was found on investigation that the former sewer of the institution had been conducted into a large brick sewer. The use of this had been discontinued, except for the bath tubs. All the down spouts of the different buildings led into this sewer without trapping. In this warm, moist atmosphere decomposition had progressed, and the air forced up through the open eave spouts, in the dry months of summer, would be diffused and drift into the windows,

which in some cases were just below their opening, and often in the evening drift to the ground where it could be readily smelled. These were at once closed by proper traps and the dysentery disappeared. No new cases developed in the buildings where they were shut off. It appeared in one building again, and on going through the court in the rear, where the inmates of this building were accustomed to have air and exercise in the evening, the same old, foul odor was discovered by the walk, and by following his nose the investigator found a piece of tile pipe, which drained this court into the same sewer, untrapped. I ask your patience while I quote one more example of the internal arrangement of the ventilating pipes which may lead to mischief. In two ends of a building were a sitting room and a hospital room. Patients were occasionally attacked with dysentery, or severe diarrhœa, in the sitting room and would readily recover when removed to the hospital. One patient was attacked with dysentery, was removed to the hospital, and in a few days recovered and was brought back. He shortly relapsed, and was again taken to the hospital and treated, was returned, and a third time relapsed. On investigation a foul sewer air was found coming through the escape pipe of a bath tub. This was found, however, to be properly trapped before going into the sewer, but ventilated above the trap. Following this ventilating pipe, it was found to go into a large ventilating main, passing through a chimney in the middle of the building, and the cause was readily ascertained. This large, iron ventilating pipe was cooler than the hot air outside, consequently a downward current was created in the main which passed into the sewer below the bath tub, becoming impregnated with foul odor on its slow way out through the bath tub vent into the room. With the closure of this pipe by trapping, dysentery ceased in that room. I do not attempt to explain why this foul air should cause colitis, but the circumstances all indicate that it did. One summer marked by excessive cool weather and abundant rains, which kept the sewer well flushed, while there was some diarrhœa there was very little dysentery, and I think, no fatal cases. This recital may form a lesson in regard to the carelessness of the ordinary scientific plumber in the discharge of his work and teach us how extremely careful a presiding officer in an institution must be in guarding against such possible infection.

Must separate buildings be provided for epileptics, or even separate colonies? In spite of what has been written on the subject, it is still difficult for me to see exactly why. It is certain that convulsion is only a symptom of loss of inhibitory power over the motor functions, and frequently co-exists with and is apparently due to the same lesion as loss of mental power. Indeed, so often do these forms of indication of deviation from the normal nervous condition co-exist, that Kerlin in his president's address in 1892, states that thirty per cent of the applicants at Elwyn were active epileptics, while seventy-five per cent had a history of epileptic tendency. Knight states that epilepsy exists of itself, or is a complication in over sixty per cent of the histories of the

children received into our institutions for the feeble-minded. Some curious reasons have been given for separating them from the feeble-minded. I quote two or three from one of the most recent works on the care of epileptics. "These unfortunates (epileptics) can not be admitted to the institution (for the feeble-minded) for the reason that they are a disturbing element and would exercise an injurious influence on the inmates, and thus retard their recovery." It is doubtful to me whether the epileptic as a rule is a more disturbing element than the excitable idiot, or moral imbecile, and still more doubtful as to whether institutions for the feeble-minded are founded with the idea of their ultimate recovery. We read in another place in the same work that the grouping of these "disturbing elements" so far from being harmful, results in mutual benefit, as it awakens the sympathy of one for another. Another reason given for their separation is, "An intelligent epileptic child is sensitive about being with a non-epileptic congenital idiot." There is no doubt that the imbecile of higher mental grade would be equally sensitive about being classed with a "non-epileptic congenital idiot," or any other kind of an idiot, and I know of no institution where such an abominable classification is in vogue. I would not be understood as opposing the establishment of separate institutions for epileptics, provided such institutions are organized of sufficient size as to guarantee a proper classification according to their mental grade and habits. The author further states, "It is coming to be recognized, if it has not already been conceded, that institutions for the feeble-minded do not meet the requirements for epileptics." As I have seen the anxious study and thorough care given epileptics under Kerlin, Knight and other men in our work, I fail to see the ground for this gentleman's statement. The vast majority of epileptics are mentally impaired, or will soon become so, and until large, thoroughly organized institutions can be found, equal in grading and caring for the epileptic as we do now for the epileptic and non-epileptic feeble-minded, I cannot but believe that the epileptic is better off in a large organized institution for the feeble-minded than he could be in a small institution for epileptics only, where such classification is impossible, and where epileptics of different mental grade are forced to reside together. I have not yet found, though I have resided in institutions where large numbers of epileptics were accommodated for many years, that the influence of an epileptic on a non-epileptic was at all harmful, and I deprecate any attempt to reflect on the present care of epileptics in the institutions for the feeble-minded until more intelligent and consistent reasons are brought forward than have been so far advanced. When such large institutions are furnished, then I shall believe that the separation of the epileptic and non-epileptic is at least permissible, and may be wise, as it is a step towards a more thorough and better classification.

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EDITORIAL.

Psycho-Physical Laboratory.—Those who have followed the work of the Bureau of Education must have been much interested in the "Experimental Study of Children, etc.," as conducted by the bureau. This department of the public service is in a position to accomplish more than any other body in this country in the line of expert psychological investigation in child study, especially in collecting data concerning the abnormal classes. It is to be hoped that congress will see to it that means are supplied for the establishment of a well equipped Psycho-Physical Laboratory. We understand that an appropriation of sixteen thousand five hundred dollars per annum would equip and support such a laboratory.

The Epilepsy of Julius Cæsar and Napoleon.—As many of our readers are interested in the claim frequently made, that Julius Cæsar and Napoleon, and even St. Paul, were epileptics, the writer asked Dr. Ireland to write an article on the subject. The doctor writes that he has nothing further to contribute to what has been stated in the "Blot on the Brain." On page forty-one of the first edition, he says:

"It is common in works about insanity to repeat the statement that Julius Cæsar and Napoleon Bonaparte were both epileptics. What we know about Cæsar seems to rest on the authority of Suetonius,* who says that Cæsar had good health, except that towards the end of his life he would suddenly swoon away, and was frequently terrified in his sleep, and that he was twice seized with epilepsy while transacting business. Plutarch mentions a report that Cæsar had a fit during the time the battle of Thapsus was fought, but this was one of his last battles. It is likely that these fits came on towards the close of his life, for a man subject to repeated attacks of epilepsy could never have run the great career that Cæsar did, though it is possible that had the daggers of Brutus and Cassius not abruptly ended his life, the splendid intellect of Julius might have sunk into insanity, perhaps after a period of extravagance and furious tyranny like that of his successor Caligula, who, from the description of Suetonius, was an epileptic lunatic.

"As for Napoleon, the testimony of Bourrienne seems to me decisive.

"It has been everywhere said that he was subject to epilepsy; but during more than eleven years that I was constantly with him, I have never seen in him any symptoms in the least degree indicative of such malady.'"



NOTES AND ABSTRACTS.

The Psychic Equivalent of Epilepsy.—Recently a contractor suddenly lost all remembrance of self-consciousness from Friday at noon in New York City until he found himself in the Buffalo General Hospital the following Wednesday evening. The last remembered by him is that, being worried about an invalid wife and also feeling mentally exhausted from a very trying political campaign, he entered the elevated train to go to his home in New York City. During the time of his loss of self-consciousness he undertook a railway journey from this city to Buffalo. He was found by the police, aimlessly wandering about the streets, and was sent to the Buffalo General Hospital, service of Dr. Charles Cary. During the time he was in the hospital, it was impos-

**Valetudine prospera, nisi quod tempore extremo repente animo linqui atque etiam per somnium exterreri solebat. Comitiali quoque morbo bis inter res agendas correptus est.*—Suetonius xii Cæsares, cap. 45.

sible to get any account from him, but he repeatedly called for his wife and for the senator in whose behalf he worked so assiduously during the campaign. Wednesday night he regained consciousness, and was much surprised to find himself in Buffalo. He gave a history of a father who died of apoplexy, and a brother who, as a young boy, had fainting attacks. He had himself, while driving last summer, struck his head, was unconscious for three hours, and had a paresis of the right side.—*Journal of the Am. Med. Association.*

Epilepsy and Measles.—In a recent article by Dr. L. Pierce Clark and Dr. E. A. Sharp, of Craig Colony, New York, on this subject, they say: "In our experience of several years with epileptics, we have known but two cases in which the epilepsy was notably bettered by an intercurrent disease, while on the contrary, we have seen many epileptics in whom the disease has been made much worse by such accidents or complications. Now and then we still see a report of an improvement of a neurosis under some accidental complication. Experience of this kind is fairly common to the neurologist. The idea has been quite contagious, and even the general public is imbued with it. In consequence many people believe that insanity and the degenerative neuroses, such as epilepsy and idiocy, may be permanently cured by contracting erysipelas, pneumonia or chronic malaria."

Some illustrative cases are given from which they conclude: "Our deductions from the study of these cases are that *in not one instance was the pre-existing epilepsy favorably modified for any great length of time.* In a few cases the progress of the disease was accelerated by the infectious complication, and *in one the measles caused status epilepticus.* In those cases in which the epilepsy was favorably modified, the temporary improvement was slight and of very short duration. We are therefore forced to the conclusion that instead of the physician urging his patient to run the risk of an infectious disease, with the small chances of such an accident resulting favorably to the existing neurosis, he should urge them to avoid any and all such complications as far as possible."—*Medical News*, Dec. 1, 1900.



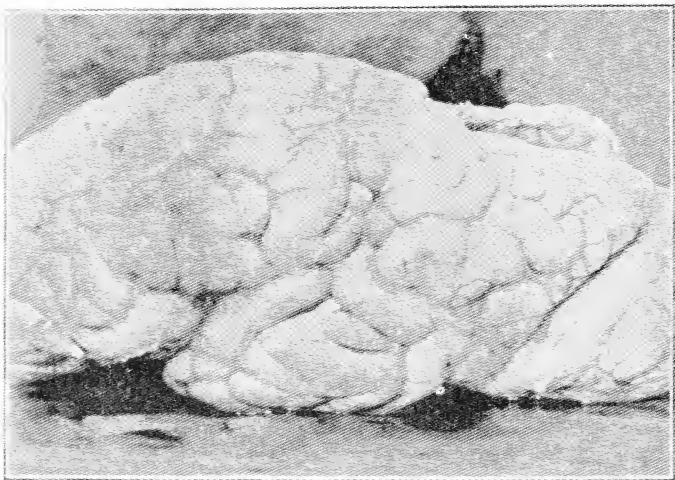


Fig. 1. Lateral View. Left Hemisphere. Case II.



Fig. 2. View From Above. Case II.

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ORIGINAL ARTICLES.

THE BRAINS OF TWO CASES OF LOW GRADE IDIOCY.

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THE two cases here reported were both at the time of death inmates of the Massachusetts School for Feeble-Minded. They are of interest because both reached young adult life without the development of anything more than the most rudimentary intelligence; neither could speak nor walk unassisted, yet the brains show the most diverse characteristics.

CASE I.

The first case, Thomas C., a boy approximately eighteen years old, had been under my observation for several years at the Long Island Hospital, Boston Harbor. During his stay at the hospital he never exhibited the slightest intelligence. His head was well shaped and of sufficient size, somewhat disproportionate to the rest of his body. His face gave no sign of intelligence. He masturbated, when allowed. There were no paralytic deformities; his failure to walk seemed due rather to apathy than to physical disability. He exercised no control over the sphincters and did not feed himself. He usually sat on a mattress on the floor, swaying backward and forward, and in regular sequence holding his breath until deeply cyanotic, then breathing rapidly until the exhausted oxygen was replenished, accompanying the rapid breathing by swaying movements. This curious, automatic act was repeated continuously throughout the day. The symptom of greatest interest in connection with the subsequent pathological findings was epileptiform seizures of the propulsive type, which were extremely severe in character. Shortly before his death he was transferred to the

Massachusetts School for Feeble-Minded, where he remained under the observation of Dr. Walter E. Fernald.

AUTOPSY.

The autopsy was done eighteen hours post mortem, the head only examined. The body was undersized and much emaciated. The exterior of the skull was of normal appearance without noticeable asymmetry. The bone was thick, particularly in the frontal and occipital regions, the dura normal. The pia showed no evidence of inflammatory change or disturbed condition of the circulation.

BRAIN.

The upper surface was macroscopically normal, with no evidence of faulty development of the convolutions, or of atrophy of any portion of the surface. On removing the brain from the skull, the crural region, pons, oblongata, base and cranial nerves showed no abnormality. The only lesion of the brain found was in the left temporal lobe. The tip of this lobe was converted into a series of cyst like formations, with exceedingly thin external walls and containing a serous fluid. Normal cortex was here entirely obliterated. Slightly farther dorsal, the cyst formation was less prominent, but the cortex and underlying white matter, involving the temporal lobe and extending into the region of the Ammons Horn, showed marked gross changes, of the nature of a sclerosis. Certain portions of the brain substance about this area were exceedingly resistant on palpation and section showed a general absence of normal gray matter. The weight of the brain without the dura was 1270 grammes, which is wholly within normal limits, being about ninety grammes less than an average adult male brain, and thirty grammes more than an average female brain.

Microscopic examination of various portions of the cortex was kindly made by Dr. August Hoch, who so far as his study went, which was, however, not complete, found no noteworthy abnormality. The affected region in the left temporal lobe, examined by the phosphotungstic-acid-hæmatoxylin method of Mallory, showed a dense neuroglia overgrowth, with disappearance of normal cortex.

REMARKS.

This case derives its chief interest from the following facts: First, that with so grave a mental defect the brain was normal in weight and in general structure, and showed gross defect only in a portion of the cortex which is regarded as playing a relatively small part in psychical processes. Secondly, that the sole gross lesion found was in the temporal lobe, and the possible association of this fact with the epileptic seizures.

Regarding the first point, it must be becoming more and more ap-

parent to us that severe mental defects lie rather in the quality than in the quantity of the cerebral substance, a proposition which this case does its part in bearing out. The study of gross lesions has its unquestioned value. The investigation into the number and arrangement of cell bodies, as in Hammarberg's* painstaking work, is a further step in progress, but no approximately ultimate knowledge of the matter can be reached until the relationships of cortical cells (neurones) is established, and the still wholly mysterious intercellular region is investigated.† On the anatomical side our knowledge must have progressed to a point at which comparisons of the relationships and intimate associations of cells is possible, before we can begin to formulate, except in crudest fashion, the law underlying the defect of intelligence, such, for example, as seen in this case. We have no justification for attributing to the lesion of the temporal lobe so grave an influence over the mental life as here observed, since it is a well demonstrated fact that extensive destructive lesions, e. g., abscess, may occur in this region without giving rise to marked symptoms, particularly of a psychical sort. The defect, in this case, was a much more subtle affair than is possible of demonstration by methods now at our disposal, and serves as a type, which on its pathological side it is a matter of great interest and importance to recognize, when our zeal for the findings of the microscope grows too insistent. In this connection, it is well to remember that enormously extensive lesions of the brain are constantly occurring in early infancy, or before birth, which lead to most disabling physical conditions, without the slightest mental defect. I refer particularly to the severe diplegic and athetotic states.

Of interest, in the second place, is the possibility of the causal relationship between the lesion found in the temporal lobe and the epileptic attacks. That epilepsy is a common symptom of many cerebral defects, and also of many apparently healthy brains, goes without saying; nevertheless the association of a special region of the brain with such attacks is always worthy of notice and investigation. There is a certain amount of evidence, which Worcester, among others, has done much to establish, that lesions of the Ammons Horn region stand in causal relationship to epileptiform attacks. In this case the only palpable lesion involved the Ammons Horn of one side. Since there was no lesion discovered of the motor areas, it is at least fair to assume, in the light of existing evidence, the possible association of the lesion in the Ammons Horn with the marked epileptiform attacks from which the patient suffered. In general it would be advisable to examine this area of the brain in all cases, and particularly in those in whom epilepsy has been a symptom during life.

*Hammarberg: "Studien ueber Klinik und Pathologie der Idiotie." Upsala, 1895.

†See Nissl: "Nervenzellen und graue Substanz." Munich Med. Wchschr., Aug. 2, 9, 16, 1898.

CASE II.*

A male, twenty and one-half years old, had been an inmate of the Massachusetts School for Feeble-Minded for about four years. No family history was obtainable. He was said to have been well up to the age of three months, when he was attacked with convulsions associated with fever, followed by paralysis of the right arm and both lower extremities (Encephalitis? Strumpell). He has had no convulsions since. He has never been able to walk or sit up; both knees stiff and flexed; feet extended and ankles rigid. Thighs are crossed and cannot be separated; the right knee crosses the left. The hips are stiff but may be slightly flexed. There is very poor circulation in feet and hands. He is able to use his left arm and hand, and to feed himself; the right arm is helpless and spastic. His method of locomotion is by rolling. There is congenital strabismus. The head is microcephalic and asymmetrical. His intelligence is much limited. He appears to understand certain things that are said to him, but cannot speak a word. He makes a cackling sound, gesticulates with the left hand, and is able to express clearly pain, pleasure, displeasure, hunger, thirst. Other boys in the ward appear to be able to understand the ideas he tries to express. His vision is apparently good.† He takes interest in what goes on about him, watches others at play, likes to look at pictures and is fond of bright colors. His bearing is good; he enjoys music, and can hum several tunes correctly. He has acquired control over the bowel, but has none whatever over the bladder.

AUTOPSY.

The autopsy was made about twenty-four hours after death, the head only examined. The body was undersized and markedly deformed, as described in the foregoing clinical history. The head was microcephalic in type, the circumference seventeen and one-half inches; from root of the nose to the occipital protuberance measured eleven inches. The skull was thick, particularly over the parietal regions. Corresponding to two marked depressions in the frontal portion of the brain and easily seen before the removal of the dura were two bony prominences on the inner table of the skull. Dura and pia normal. The brain completely filled the cranial cavity, which was asymmetrical. The left hemisphere was markedly smaller than the right, with abnormal convolutions in both. Very striking at the autopsy was the posterior portion of the brain, including the upper parietal and occipital lobes. The cortex here was so greatly reduced in thickness that fluctuation from the distended ventricle was easily obtained on the left side.

*For this history, as well as for the autopsy in both cases, I am indebted to Dr. Walter E. Fernald, Supt. of the Institution.

†An examination of the visual field and for hemianopsia would have been interesting in the light of the autopsy findings, but no doubt very difficult of accomplishment.

The right hemisphere appeared approximately thirty-three and one-third percent larger than the left.

The brain was hardened in formalin, and after hardening weighed six hundred and twenty grammes less than half that of Case I. The peculiarities of this brain permit a somewhat more detailed description than that made at the autopsy. A reference to the plates will give an idea of the general appearances when looked at laterally, fig. 1, and from above, fig. 2.

PLATES.

The striking features of the brain taken as a whole are: The general faulty development of both hemispheres, especially of the left, exposing the cerebellum to a very unusual degree; the anomalous convolutions most conspicuous in the parieto-occipital lobes. An attempt to trace the recognized fissures, sulci and convolutions fails. Apart from the Fissure of Sylvius, which is invariably present in all cases in which the cerebral hemispheres have developed at all, the arrangement of sulci is wholly abnormal. (See figs. 1 and 2.) The central fissure is interrupted by numerous gyri and is not with certainty to be made out in either hemisphere. In the frontal regions of the brain many of the convolutions show a sufficient development, and are sharply enough marked off by sulci from their neighbors. Others are atrophic, showing the condition of microgyria. At no point, apparently, does the surface communicate with the ventricles and a radial arrangement of the convolutions is not observable. Of special interest is the condition of the posterior lobes. The cortex and underlying white matter at this area in both hemispheres but particularly the left, which throughout shows the most marked changes, is reduced in places to almost paper thinness. At the autopsy, before the cerebro-spinal fluid had escaped, as already stated, fluctuation was easily obtained, giving an appearance resembling a tensely dilated cyst. Over these cyst like areas, all semblance of normal convolutions has disappeared, leaving a very striking condition on microgyria.* There is, however, no indication even in this region of a true porencephalus. The cerebellum appears perfectly normal in size, and certainly takes no part in the maldevelopment of the cerebrum. The base of the brain shows no gross abnormality, beyond the general reduction in the size of the cerebral hemispheres. The cranial nerves are normal. A stained (Wright) section through the oblongata shows a slight degeneration of one pyramidal tract. It is worthy of note that there is in the oblongata an unusual development of the ventral external arcuate fibres together with very prominent

*Immediately on removal of the brain from the skull the distended posterior lobes collapsed, giving the appearance as seen in the plate, fig. 2.

arciform nuclei,* which occupy considerable areas in the region of the pyramidal tracts. Of interest finally is the relation of the skull to the brain in this case. The distortions and asymmetry of the skull were found to correspond perfectly to the defective brain. The evidence to be derived from a study of the inner table goes to demonstrate what is now generally accepted, that the brain is the determining factor in the shape of the skull and not the converse. A clearer recognition of this fact should do much to prevent the almost invariably useless operation of craniectomy.

REMARKS.

Taken in conjunction with the brain of Case I certain points of interest at once suggest themselves. In the first place the intelligence of this second patient was certainly equal to and probably superior to that of the first case, in spite of the fact that his brain was only half as large and very much more disorganized, judging from gross appearances. There is no mention of epileptiform attacks in the second case, although the motor area especially in its superior portion shows marked signs of disease, whereas in Case I, with normal appearing motor cortex but disorganized Ammons Horn, there were violent attacks. The paralytic condition of the second case is adequately explained by the imperfect development of the motor cortex. In this case it would have been instructive could general sensation have been tested, again a difficult thing to do with so small a degree of intelligence. The same remark applies to sight, which it would seem quite impossible to have had preserved intact in so extreme a disease of the occipital lobes. It is highly probable that the real perception of objects seen was lacking, although the cruder sensations of light and color were preserved.

The two cases are instructive, at least, in showing us how relatively slight the relationship may be between mental defect and physical defect of the brain. No doubt the relationship in the last analysis is an absolutely exact one, but it surely depends upon details of structural association and chemical composition, of which we yet have only the faintest glimmerings of knowledge. In the meantime we need more autopsies, a closer correlation of the symptoms and the pathological process, so far as we can get at it, and a painstaking investigation of the brain from the point of view of the relation of its parts as well as of its cellular structure. The influence of Flechsig should certainly be felt in this line of work. On the clinical side progress should be made in classification. The sooner a classification can be built on a basis of pathological anatomy, however crude it may be, the more quickly will our knowledge become exact. The time has surely passed for such terms as "eclampsic" or "epileptic" or "paralytic" idiocy. Never mind how broad our basis may be, we need something that is a basis and not merely a clinical expression of a perfectly palpable fact.

*These nuclei are wholly lacking in the churpanzee.

REPORT OF THREE CASES OF THE OPIUM HABIT IN
FEEBLE-MINDED BOYS.

BY J. C. CARSON, M. D., SYRACUSE, N. Y.

AT the Lincoln meeting of the Association, in 1885, I reported "A Case of the Opium Habit in an Idiot Boy." That case was one of twins, born to a mother who was addicted to the opium habit. The mother was seized with convulsions following her confinement and died two days thereafter. It was related in the history of these twins, that about six hours after their birth they began to cry, or "screech and jerk," as the grandmother expressed it, and kept this up so violently and incessantly that patience finally ceased to be a virtue. The mother was in convulsions, and as all other measures resorted to for quieting the infants failed the grandmother knowing the mother's habits decided to give the babies a little opium. She therefore took a small bit of opium about the size of a grain of wheat, dissolved it in a little water and gave each child a teaspoonful. The remedy acted like a charm, for in a short time both fell asleep and remained tranquil for about eight hours, when the "screeching and jerking" were renewed. The opium was again resorted to, and from that time henceforward was repeated *pro re nata*. At the end of the first month one of the twins died. As the survivor grew older, the quantity of opium daily administered to him was increased from time to time, as the necessities demanded. By the time he had reached the age of seven years, he was taking, in divided doses, ten grains of opium daily. The grandmother then desperately determined to break him of the habit, by gradually reducing the quantity. By the time the boy's tenth year was reached, she had succeeded in reducing the amount to one grain daily, taken at bed time. At this time the boy was admitted to the Institution for Feeble-Minded Children in Syracuse. He was of the idio-imbecile grade, and had been subject to epilepsy which first developed when five years of age, during an attack of pneumonia. For the full report of this case and my deductions therefrom, you are referred to the "Proceedings" of the Association for the year 1885. That report, I have reason to know, elicited some interest professionally outside of our Association meeting. I have therefore decided to report two more cases, somewhat similar, which have come under my observation within the past year.

The first case was that of a young man, E. W. B., who was indicted in Syracuse, N. Y., for forgery in the second degree, having signed his father's name to the back of a note of one hundred and ten dollars, for a team of horses that he purchased. This young man was placed on trial during the course of which the question of his competency was raised, and I was sent for to make an examination into his mental

capacity. The first thing I learned concerning him was that his mother had been a morphine habitue, and very soon after his birth she began administering the drug to him. This she continued to do until her death, which occurred when he was thirteen years of age. The father then determined, as the story was told, to rid the boy of the habit. In this, after a week's desperate struggle with the boy, he was successful. As the mother was always the one who gave the boy his "dose," and the father was now helpless and paralyzed, there was no one who could tell me anything regarding the daily quantity the lad was taking at the time of the mother's death.

Upon examination, I found the young man possessed with considerable intelligence; he could read, spell and write quite well and was able to tell me, after a little thought, that the difference between eighty-three and one hundred was seventeen. His gait was awkward and shuffling, like that of most imbeciles, his facial expression indicated mental weakness, and in his manner there was a degree of shyness and indifference. He told me that the boys teased him when he went to school, made fun of him and called him names; that even since he had grown to manhood the boys on the street had hooted at him and called him names. He had been willing to work at less wages than other men received, at fifty cents a day, or what ever he could get. His friends told me that he had no companions, and when he was not at work he would stay about his father's house, "sitting around." He was seldom inclined to go out upon the street unless some friend would suggest his going along for company.

The evidence in the course of the trial made it appear quite probable that the party who sold the horses to the young man engineered the whole transaction, that is, urged the purchase, drew up the note and suggested the father's indorsement. This indorsement was written well and straight across the back of the note, and the party who sold the horses knew at the time of the transaction that the young man's father was blind and helpless.

In spite of my evidence in this case, that I believed it impossible for a person to whom a drug so powerful as morphine had been daily administered during the first thirteen years of life to grow up with a brain unimpaired; that the defendant was below normal in intelligence; that he was weak-minded, and unable to fully comprehend the nature and quality of the act he had committed; the jury nevertheless brought in a verdict of guilty, and the fellow received a sentence of three months in the penitentiary. While I was unable to impress the jury that the young man was feeble-minded and irresponsible, I think I did however impress the Judge to an extent sufficient to cause the light sentence imposed. The District Attorney also told me that, while he did not agree with my conclusions during the course of the trial, he became convinced after the trial was over, that my opinion and estimate of the fellow's mental capacity were right.

My third case was that of a boy, C. W. R., past eleven years of age

who was recently admitted to the Syracuse State Institution. This boy was the surviving one of four children, the other three having all died in infancy. The application paper stated that the boy had attended school for three or four years; that he had learned to read words of two or three letters, and to count to fourteen; that he could not remember what was taught him and did not advance; that he was restless and liked excitement; that his father was intemperate and his mother a morphine habitue, and that she had for several years administered morphine to the boy.

Upon the boy's admission to the Institution, I found he was much more intelligent than he had been described in the application. He was able to answer ordinary questions and to ask some very sensible ones, for a boy of his age. He acknowledged the morphine habit and said his mother had given him the drug for as long a time as he could remember. He said he hated the "stuff" and wished he could be cured of the habit, but was afraid he would die if he had to go without it. He was rather pale, thin in flesh, nervous in manner, and was very near sighted for which he wore glasses. His hair was auburn and his head of an irregular shape and this feature was quite apparent. He brought with him two morphine powders which his mother had given him before leaving home, and said he was in the habit of taking one such powder morning and evening every day. We took the two powders, weighed them and found their weight to be just three grains. The boy was therefore taking one and one-half grains of the drug twice daily. During the first week or ten days after his admission he was nervous, restless, slept poorly, was depressed and had a very poor appetite. He was given one quarter of a grain of morphine about twelve o'clock the second night after admission, and the same amount on the following night. That was all we found necessary to give him. At the end of a week to ten days his appetite had improved, he began to sleep better, became more cheerful, and by the end of from two to three weeks had lost all desire for the drug. He then gained rapidly in weight, his cheeks became full and rosy, and he soon presented an altogether improved physical appearance.

A few weeks after his admission, I wrote to a physician in the town where the boy's parents resided, who was largely instrumental in having the boy sent to the institution, and asked him for a history of the boy and of his acquirement of the morphine habit. His reply was in substance as follows: The boy's father is American born, of good families of temperate habits and industrious people, but he (the boy's father), became intemperate when a young man and so continues up to the present time. He is now forty-two years of age and was therefore about thirty when the boy was born. The boy's maternal grandfather was a fairly intelligent man and lived to be quite old, but was always intemperate. His maternal grandmother was a morphine habitue during the last twenty-five years of her life. His mother states that she

had a severe illness when about thirteen years of age from what she calls a "fever sore" but which was probably a necrosis of the tibia. This illness lasted for over a year, and during it the doctor gave her considerable morphine, and it was then that she acquired the habit. She was about twenty-six years of age when this son was born and had accordingly been "an habitue" for nearly thirteen years, and at that time if her statement can be relied on was taking about thirty grains a week. She also stated that the physician who attended her when the boy was born knew of her "habit," that she was unable to nurse the child, that he was very restless, and was so troublesome, worried and cried so much that they (meaning the doctor and herself) decided to give him a little morphine solution. The effect was as happy as it was magical. The drug was continued, as occasions required, and the habit was on from birth. At the present time the mother, according to her own statement, is taking a bottle (one dram) every ten days or six grains daily, and before the boy left home they were taking between them one dram a week. Under that proportion the boy was taking eighteen grains a week, and this practically agrees with the quantity contained in the two powders, heretofore mentioned, which the boy had in his possession when admitted to the institution, that is, three grains or a day's supply. The physician who obtained this information for me further stated that another child was born in the same family about ten years ago. The child was of delicate constitution and had a peculiarly shaped head. The doctor says, "I do not know whether the mother gave this child opiates or not, but I have reason to believe she did. The child died when about a year old from convulsions."

In presenting these cases, the question again occurs whether or not a child born to a mother who is an opium habitue has the habit also entailed upon him at birth? It would seem in these cases as if such were the fact. Illustrative cases are not abundant for two reasons: First, women subject to the opium habit are not prolific and are quite apt to be sterile; and again if such a mother should nurse her child, he would probably obtain the drug effects through her milk, sufficient to meet his wants. Then again, in case the mother was not able to nurse her child, it is not every mother who would immediately administer the drug at birth in case of great restlessness or upon the persistent "screeching and jerking" of the infant. The mother or nurse might endure such conditions for a few days, and the child's habit would consequently be "cured" at the outstart. Our experience has been that the "habit" in children, or at least in those of the feeble-minded class, is not difficult to cure, for in neither of the cases described did the mental agony and intense suffering as commonly observed in normal adults supervene upon the withdrawal of the drug.

THE SURGICAL TREATMENT OF EPILEPSY.

BY DR. W. N. BULLARD, BOSTON, MASS.

THE results of the surgical treatment of epilepsy may be summed up as follows: There is a certain class of cases, a comparatively small proportion, in which really beneficial results are obtained by operation. In a large proportion of cases no specially beneficial results are seen other than those which often occur in epilepsy after any severe operation. After any severe operation we are accustomed to find a temporary improvement, sometimes lasting for months, but the patient usually returns to his previous condition very shortly.

The cases which justify operation are those in which we have a direct history of traumatism. In operating on a traumatic case we do very often obtain some benefit. This is, of course, especially the case where we see and feel a depression of the skull due to the injury. That and the scar are perhaps the best indication for the interference of surgery. If these are over a motor area and if there is corresponding paralysis, we are often able to lessen that, as well as to reduce the number of attacks. Where we do not have the depression of skull and scar the question of operation is more difficult to decide. In a certain proportion of traumatic cases we do find real benefit. I remember operating three years ago on a man who had received an injury from the kick of a horse. He had been operated on several times in Pennsylvania and Ohio without benefit. At the operation which we did, which was the fifth time, I think, we removed a good deal of the dura. He reported to me two years after that he had been benefited, but still had an occasional epileptic fit, perhaps once a year or so. Previously they had occurred once a week. There was decided benefit lasting two years at least, but in a considerable proportion of epileptic cases we can hope for nothing more than a certain diminution in the frequency and severity of the attacks.

In regard to operating upon feeble-minded children for epilepsy, where the two are combined, I do not think the results have been specially favorable. I had a case this year on which I decided to do an operation at the request of the parents, with the following result: The child was about nine years old, and had received a blow four years previous by falling out of a swing and striking the back of the head. There was no apparent injury, no scar and no depression. I found in operating a very large hemorrhagic cyst, perhaps three inches long and one and a half inches wide. It ran almost to the wall of the lateral ventricle. I did not believe we should gain much, the defect was so large. The child did not improve much but it is still too soon to say whether it will in future. Where there is so much brain defect, improvement could hardly be looked for.

My experience, on the whole, in operating in epilepsy and on the

feeble-minded, is not specially favorable. I think there are few cases in which it should be tried.

It is exceedingly important when we are operating for epilepsy that it should be done in the best possible way. There is no considerable amount of danger in operating, and I have seen children die frequently in the early days where now we should consider such a result totally incompatible with respectable surgery. Where we have an operation under proper circumstances we consider it comparatively harmless as regards the life of the child. It therefore seems justifiable at times to perform it in order to see what beneficial effects we can obtain. If epilepsy comes on suddenly from trauma, and one could operate immediately, it should be done. In a majority of cases those who come to us have been epileptic a long time and the brain has acquired the epileptic habit, and we cannot hope to cure it by means of operation. The most that we can do generally is to free the thickened pia, perhaps remove a portion, and possibly remove a certain portion of the brain, remembering that if we remove from motor areas we must have paralyses. I have operated on a patient at his own request, a man of twenty-five, in which case there was no known cause for the disturbance, but where we found chronic lepto-meningitis and a thickened pia. He was so much improved by the first operation, although he still had attacks, that he insisted on a second operation and that as much as possible of the affected parts should be removed even although he had paralysis in consequence. The operation was done about two weeks ago and I removed a small portion of the cortex. He was totally hemiplegic but I hope he will improve in a few days; but that danger has always to be considered. I may say therefore, in general, that in operations on epileptics the case should be chosen very carefully. Operations do not hold out much chance of great improvement, but where the operation can be performed under such conditions as to practically insure doing no harm, there is a small number of cases which seem to be justifiable because we do get benefit; but I have never seen a cure.



THE PENNSYLVANIA TRAINING SCHOOL FOR THE FEEBLE-MINDED FROM THE STANDPOINT OF A MANAGER.

JOSEPH R. RHODES, ELWYN, PA.

AFTER nearly thirty years of service as one of the managers of the Pennsylvania Training School at Elwyn, how does the work for the feeble-minded look from a manager's standpoint? It has been suggested that an answer to this question might be of interest—
"Hinc illa lachrymæ."

In recalling this thirty years of work, one figure looms up before

me and almost fills the picture—Doctor Isaac N. Kerlin, of course. He was a pioneer in the work, a scientist, an enthusiast, a philosopher, earnest and devoted, but cheerful and hopeful always, to the very last. The institution at Elwyn was his life-work, but it lives after him; it grows and prospers as he would have desired and carries on day by day its beneficent work. Its millennium, in numbers, is almost reached. A thousand children (to speak in round numbers) are here gathered for instruction and care. Able physicians watch over them and look after their health and growth. Earnest, refined, educated, cultivated teachers instruct and amuse them—the amusement is quite as important as the instruction, for think how many hours of the twenty-four remain before and afterschool. Even a cursory perusal of the manual of Elwyn—a little book composed by Dr. Kerlin and published by order of the Board of Managers in 1891—will show the care and thought given to the entertainment of the children and still more to assisting them in entertaining themselves. “Satan finds some mischief still for idle hands to do,” is just as true of the feeble-minded as of their stronger brethren. All who have studied the work among the feeble-minded agree that, “*Keep them always employed at work or play*” is the foundation stone of discipline and improvement in such an institution as Elwyn. All this, however, is primarily and mainly for the superintendent, the physicians and the attendants, and may be safely left to such a capable corps as is in charge at Elwyn. In the present superintendent, Dr. Martin W. Barr, we have a man who served for years as assistant to Dr. Kerlin and who is, we believe, thoroughly imbued with his broad and intelligent philanthropic views, and one who is well versed in the science and learning of his profession as it deals with the feeble-minded.

The problems, however, that most directly confront a manager, are mainly of a different and more prosaic kind, such as questions of admission and discharge—whom to take and whom to refuse of the hundreds who knock at our doors. For many years the institution had no proper facilities for the care of epileptics and, as far as possible, refused them. Now, thanks to the bountiful provision made by the state of Pennsylvania we have two new buildings specially devoted to such cases, to the great relief of many a hard-working family in our state.

At first our work was limited to the “training and education of children only,” but the children grew to womanhood and manhood, and where they had not sufficiently improved we were loath to send them away to county almshouses or back to unsanitary and poverty-pinched homes. Thanks to the generosity of John M. Sharpless and others a free fund was provided for the care of asylum grades and this portion of the work has now filled the two fine new buildings—Hillside, Home A and Hillside, Home B. An amendment in later years to our charter has struck out the limitation of our work to children, so that age is not now a qualification. Many asylum grade cases are also supported by state aid.

To the managers other problems, too, are constantly presenting themselves: questions of ways and means; questions of discipline; questions of legacies and donations from the charitable; appropriations from the legislature for buildings and for maintenance; a good and sufficient water supply on our lofty hills; good, safe drainage; plentiful and economical heating and lighting; the cost of provisions and the proper cooking of the same, now given in charge of a steward whose duties also involve the work of the farm, the garden and the dairy. And just here the mercifulness of God even in the cursing of our first parents is well illustrated:—"In the sweat of thy brow shalt thou eat thy bread." It is a "*changed cross*." The farm and garden work for the men and boys, like the laundry and house work for the girls and women is one of the greatest of blessings to the institution and the inmates. Good, healthy, vigorous exercise in a useful direction—nothing else is so safe and effective a tonic—so safe and effective a stimulus, to these sluggish natures and feeble minds. The cross of physical labor is adorned and hidden by the flowers of health, virtue and usefulness.

The finances of such an institution are no mean portion of the work of the management. The dark financial days of the institution in 1863, during the War of the Rebellion, are sadly recalled by the older managers. Many southern people had placed their feeble-minded children at the school, paying, in some cases, considerable sums for their support and tuition. When the South rebelled, all debts to the North were considered cancelled, the children were left on our hands, the debts for their maintenance were left unpaid. Bankruptcy stared us in the face. The necessary money for immediate needs was, however, borrowed, and appeals were made to the generous and charitable, the responses to which were sufficient, with rigid economy in every department to finally place the work firmly on its feet again. But for many years our financial condition was a constant source of strain and anxiety. We still need the pecuniary aid of the wealthy and charitable and point proudly to the result of their beneficence.

Again and again managers are asked by our interested fellow citizens the question, "How much good are you doing to these children how much can they learn?" And some very liberal givers to whom I have in years past appealed for contributions toward the work have refused, giving as their reason a belief that there was not much that could be done in improving idiots, and that the money would be better spent in teaching and aiding people of full mind and normal capacity.

The question and the objection are both answered conclusively by the facts of our work. *Many of our children become self-supporting*; many more are returned to their families and friends so greatly improved that from being helpless dependents, they are able helpers and pleasant companions. Others again, who, when they came to us, were disgusting in their personal habits or unable to attend to even the simplest of their bodily wants, return home, after a few years, neat and cleanly in their persons and able to behave themselves as decent human beings, even

if their intellects remain weak and clouded. There remains of course a large residuum of unimprovable cases, the low grade idiots (such cases being idio-imbeciles and apathetic and excitable), who fill our asylum wards and are the despair of managers and attendants, being incapable of any school training and requiring constant care and watchfulness, that they shall not injure themselves or others. What good are we doing to these and to the moral imbeciles and the incorrigible, many of them men and women in stature, but mere children in intellect and moral discernment, and many of them full of the love of mischief and of the tendency to destructiveness which belongs to the most degraded and worst bred children? As to these, there is little we can do for them except to keep them clothed and warmed and fed. They vegetate, and do little harm under our care to themselves and others, and occasionally one of them begins to develop and surprise us by improvement, but in the main we can do little to improve them. Yet even in these most desperate cases our Institution is *doing a grand good work for the families of these inmates and for the community*. How? Every such idiot brought to us, means a family often of hard working, industrious members relieved of a burden like a living death and left free to work, to grow and to improve—left free to sleep peacefully at night, free from the care for the idiot son or daughter, brother or sister and to recuperate for the useful, remunerative toil of the coming day. It is authoritatively stated that for every idiot sequestered in an institution at least two and often as many as four useful members are released to society. Is that not something? Is that not a great thing? To free the industrious and capable from the constant nervous strain of watching over and caring for these miserable "*enfants d'arriere*," as the French call them? From the point of view of a manager who has seen and heard much of the doings and needs of low grade idiots, this feature of the work appeals most strongly.

In an enlightened, active, common-sense community like ours, it is impossible that the burden of an idiot in the family should be lightened (as Balzac, in his novel, "The Country Doctor," so beautifully describes it to have been among the uneducated peasants of the deep, dark, narrow mountain valleys of Savoy and the French Alps) by a superstitious belief, that the presence of the idiot brought luck or good fortune to the house or village. So strong was this feeling that the good doctor, who strove to break up the little settlement where *cretins* were gathered and where they procreated their kind, was, at first, mobbed and stoned by the people because he was taking away *their mascots*.

This brings us to another point which, from the point of view of a member of a board of managers of an institution for the feeble-minded, is vitally important to the commonwealth. The constant watchfulness which is only possible with a disciplined corps of physicians, teachers and attendants, avoids dangers to the females among the feeble-minded, to which in unguarded homes of poverty and laborious care for the gain-

ing of daily bread, they are especially exposed. The cowardly libertine, who might hesitate to take liberties with the strong-minded, may find the feeble-minded a ready prey, with results injurious in the extreme, not merely to the individual but involving a growing burden to the community. This danger is eliminated by the safeguards thrown around the inmates by the discipline of the institution. Proper and judicious medical treatment, active employment and active plays and amusements tend to give also self-control and weaken the domination of the passions.

Among the beneficial agencies in this direction are open air walks and games, and, in bad weather, gymnastic exercises, musical and dramatic entertainments, for which our Keystone Hall with organ, piano, etc., is admirably adapted. A military company among the boys with regular drill and manual of arms, a well organized and thoroughly taught brass band composed of both boys and girls, help greatly in the work of entertainment and serve to provide many rewards and also punishments, such as deprivation of membership, suspension from service, etc. So great is the stimulus of the *esprit du corps*, and of the power of society, so to speak, that will-power and self-control, both physical and mental, are often wonderfully developed.

I recall a striking instance. At one of the holiday entertainments almost the whole household was gathered in the amusement hall where a little comedy was played, recitations made, songs sung, etc. Many of the lower grade children were (upon solemn promise of extra good behavior) permitted to attend. Among these *were a number of epileptic children who promised, that if allowed to be present, they would not, during the performance, have epileptic fits.* Doctor Kerlin, who was at my side in the audience, saw one of the little boys giving signs of succumbing to one of these attacks and thus spoiling the performance. The Doctor leaned over to him and quietly whispered, "*Johnnie, don't forget your promise.*" The little fellow straightened up, exerted his will-power, and the danger passed away.

Many useful arts are taught and much good service, helpful to the individual as well as to the institution, is rendered. A corps of the larger boys runs the bakery and no connoisseur could despise the elegant light loaves of bread and cake which they turn out. The girls are taught sewing and embroidery, and those suited to it do a great part of the laundry work, mending of clothes and such like. There is a brush and broom shop, a basket-weaving shop, a boot-and-shoe shop; cows are to be cared for and milked; grading and planting are to be done; weeds are pulled and crops harvested; lawns and paths are raked and cleaned; while inside, rooms are being swept and beds made. Verily a busy place is Elwyn. To the casual visitor the sight of these feeble-minded children is often depressing and unpleasant, but to those of us who, as managers, know and feel the good that is being done, and watch it, from month to month and year to year, sustained interest and real pleasure are the result. The "sloyd" system of wood carving has

lately been introduced and will, we think, prove a very useful branch of art instruction. A tailor shop, which is conducted by the labor of the boys, saves yearly over \$1,200 in clothing and there is also a well conducted sewing room for the girls.

The establishment of the institution *in the country* on a farm, with woods and hills and streams, free, fresh air, beautiful views and space enough to exclude to a great extent the outside world, seems to us managers one of the wisest provisions for the success, moral, mental and physical of our charges. This was secured in the selection of Elwyn. The wisdom of such a location has been recognized by the removal of the Philadelphia House of Refuge and the establishment of the I.V. Williamson Schools a few miles south of us. The Pennsylvania Training School for the Feeble-Minded was one of the first to display this wisdom and establish itself amid such surroundings. We believe that the plan we have adopted of a number of separate buildings has many advantages over the concentration in one large building. It is safer from fire, safer from disease, affords opportunities for classification and the isolation of certain cases and daily proves its value. The distant buildings are connected by a tram-railway run by donkey power and the rides in its cars are a constant delight to the children. Shares in this railway, Doctor Kerlin called, "*a good investment for the benevolent.*"

Lastly, the manager's "point of view" recognizes that, after all the details of financial and commissarial and instructional work have received due attention, it remains true that the foundation-stone of the whole structure is its *medical* basis. Our superintendent has always been and should always be a *physician*, one who can "minister to a mind diseased." All work, all instruction, all amusement must be studied in its effect on these feeble minds, to build them up and strengthen them. The head physician must study, and watch, and note, and act accordingly. At Elwyn we are fortunate in the possession of an able medical staff whose services, largely voluntary and unpaid for, save as "Virtue is its own reward," are of the greatest assistance to the superintendent and the managers. Well known specialists examine ears, eyes and teeth, and advise and operate whenever deemed best. All that skill, intelligence and devotion can do for these poor children, is done for them. Such intelligent care would be impossible in the detached and often miserable homes from which they are sent to us. Thank God for the privilege of thus ministering to his little ones. His blessing is promised to all who minister to them. His bitterest curse is pronounced on all who injure or offend them.

This *coup d'œil* of Elwyn may best be closed by the following quotation from an address by Dr. Kerlin (one of his last public acts), delivered in 1892, as President of the annual meeting of the Association of the Medical officers of American Institutions for the Feeble-Minded.

His address on that occasion was full of scientific information on new methods of treating idiocy (especially by surgical procedures), and of practical wisdom as regards organization. He insisted, with all the

weight of his long experience, on the essentially medical character of all successful institutions for feeble-minded children. He says:

"I am unwilling to admit that our work is any other than a *medical philanthropy*; a hospital was its birthplace and its cradle. It is our *supineness* our lack of courage and faith, which shall yield this trust to other than medical men.—Every department of duty, whether official, domestic, farming, or laboring, should be made tributary to the elevation and instruction of the inmates; it is the pessimist—indeed worse, the superficial and vapid reformer—that would venture to modify the directness and application of these principles. To rob the superintendent of the garden and farm life of his boys is the same as to deprive the surgeon of his best instruments; to limit him to the avocation and direction of the school room is to wither his right arm; to confine him to medical practice is to forget his broader relation to his patients in all their varying psychical moods and higher moral life; to restrict or abridge in the slightest his free movements of men, women and material, is to ignore the many-sided aspects of his professional duty. Of course, there must be faults and failures in any system, but 'any fool can find the faults; it is the wise man who can find the remedy.' "

Should this broad minded and intelligent ideal of work continue to rule in the management, we may well look forward hopefully to a great and happy future for the Pennsylvania Training School at Elwyn.



RÉSUMÉ OF THE REPORT ON THE PATHOLOGICAL ANATOMY OF IDIOCY.

BY J. MIERZEWJESKY, MEMBER OF THE MEDICAL COUNCIL, PROFESSOR OF MENTAL DISEASES AT ST. PETERSBURG. PRESENTED TO THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE AT PARIS, AUGUST 4TH, 1900.*

(Translated for the Journal of Psycho-Asthenics by A. R. T. Wylie, Ph. D., Faribault, Minn.)

THE classification of the different forms of idiocy proposed by M. Bourneville†, based upon the gross anatomico-pathological changes, for the most part morphological, of the central nervous system, corresponds to the practical needs of science in its present state;

*Archives de Neurologie, Oct., 1900.

†Bourneville, Recherches clinique et thérapeutiques sur l'épilepsie, l'hystérie et l'idiotie. Compte rendu du service des enfants idiots, etc., de Bicêtre pendant l'année, 1890.

but the anatomico-pathological classification based upon the minute study of the nerve tissue and its elements, and upon definite embryological ideas is demanded by the progress of our knowledge.

The basis of all the lesions of the brains of idiots is deviation in the development of the nerve tissue, and its origin must be sought for in the embryo or in the pathological lesions which arise in earliest infancy and are the point of departure of the deviations in later development. There does not exist a true arrest of development, morphological and histological, of the brain as a whole, but there is an arrest of development of certain regions of the brain which is proven by the presence of neuroblasts. Among the brains of idiots which belong to this category, of which the minute histological structure is better studied, and which according to their special characteristics form a group by themselves, are found brains in which the white matter of the cerebral hemispheres is very little developed, so little that the grey matter of the cortex is distinguished by its great abundance. These brains, which belong to the microcephalous and the semi-microcephalous, very frequently have the convolutions arranged in microgyri, but they are found without them—cases of Meine, Matell.

The first case described was the one which I communicated to the International Congress at Geneva, 1877, and which was published in the proceedings of this Congress (p. 642 fl.). However, in 1878 I reported the same case in greater detail in a communication upon the pathological anatomy of idiocy, which was published with plates in the Proceedings of the International Congress of Mental Medicine at Paris*.

In the same year, 1878, appeared the observation of Heschl of Vienna†, followed by a whole series of researches of Chiari‡, Otto§, Matell||, Marchand¶, Meine**, Scarpatetti††, Oppenheim‡‡, Brisler§§, Monakow|||.

*Mierzewjesky. Recherches anatomico-pathologique sur l'idiotie. Compte rendu du Congrès international de médecine mentale de 1878, tenu à Paris (p. 215 et suiv.).

†Heschl. Ueber die vordere quere Schläfenwindung, u. s. w., 1878. Festschrift antasslich des 20 jährigen Jubilæums der Irrenanstalt in Wien.

‡Chiari. Ueber einen Fall von Mikrogyrie bei einem 13 monathigen Knaben. (Jahrbuch für Kinderheilkunde, 1879.)

§Otto. Casuistische Beiträge zur Kenntniss der Mikrogyrie. Archiv. f. Psychiatrie, xx Band, 1 Heft.

||Matell. Ein Fall von Heterotropie der grauen Substanz. Archiv. f. Psychiatrie, xxv Band, 1 Heft.

¶Marchand. Beschreibung dreier Mikrocephalengehirne (Nova acte der Kls. Liop. Car. Deutsche Akademie der Naturforscher, Abtheilung I, B. LIII, A. 3, Abth. II, Bd. LV, N. 3, 1890.

The brains of idiots with which we are now occupied are characterized by the very slight development of the centrum semi-ovale, and by the enormous distention of the ventricles. The cerebral hemispheres are transformed into vessels with thin walls, the thickness of the walls in the case described by Monakow varying from three to fifteen millimeters, and in the case which I have described from four to sixteen millimeters. In this last case the grey matter composed two-thirds of the wall of the hemispheres, and the white matter one-third only, and sometimes even less.

These cases are beautiful examples of the meagreness that the white matter of the hemispheres attains, and they are always accompanied by microcephaly and microgyri. In the other cases the white matter of the hemispheres is diminished in the less elevated parts and the microgyri do not appear. In the cases best studied in their histological aspects with the application of the new methods of research (cases of Matell, Meine, Monakow, etc.), there has been found a lack or insufficient development of the transverse, intra-cortical, medullated fibers. In the case of Monakow neither the tangential fibers nor the striæ of Vicq-d'Azyr were found; in the case of Matell the tangential fibers, the striæ of Baillarger and of Vicq-d'Azyr were developed; in the case of Meine the tangential fibers did not exist but the striæ of Baillarger and of Vicq-d'Azyr were very pronounced.

As for the short sub-cortical association fibers, uniting the near convolutions, and the long ones, uniting the distant convolutions, they were not found for the most part in the case of Monakow, while in the cases of Matell and of Meine the short association fibers were sufficiently developed but the long association fibers were either wanting entirely or very slightly developed.

The fasciculi radiata, sufficiently well developed in the case of Monakow, were extremely small in the case of Matell.

The lack of white matter in the hemispheres is made up by the grey matter which is distinguished by its great development and the extreme thickness of the cortex. The grey matter of the convolutions in certain cases shows very clearly its characteristic layers and elements among which are found the giant cells, but in other cases the cells are shriv-

**Meine. Ein Beitrag zur Lehre von echten Heterotropie grauer Hirnsubstanz. Archiv. f. Psychiatrie, xxx Bd., 2 Heft.

††Scarpattetti. Mikrocephalia vera. Archiv. f. Psychiatrie, xxx Bd., 2 Heft.

‡‡Oppeinheim. Ueber Mikrogyrie, etc., Neurologische Centralblatt, 1895, N. 3.

§§Brisler. Klinische und Pathologisch-anatomische Beiträge zur Mikrogyrie, Archiv. f. Psychiatrie, xxxi Bd., 3 Heft.

|||Monakow. Ueber einen Fall von Mikrocephalie. Archiv. f. Psychiatrie, xxxi Bd., 3 Heft.

elled, there is no regularity in their arrangement and the giant cells are wanting.

That which characterizes the grey matter of the hemispheres of like brains is the existence between the fourth layer of the cortex and the centrum semi-ovale of a thick intermediate layer of neuroblasts (my case) or a layer of ganglionic elements similar to the fourth layer of the cortex (cases of Matell, Meine), but distinguished from this last by the irregularity of the arrangement of the ganglionic elements. A stria of white matter separates, in the case of Meine, the fourth layer from the inserted layer. As for this intermediate layer, it is composed of ganglionic elements, the authors naming it the heterotropia of the grey matter, although it is diffuse and does not resemble ordinary heterotropia, which appears as islets of ganglionic cells in the white matter. Among the microcephalous with microgyri this intermediate layer is formed of neuroblasts, and among the semi-microcephalous of elements more developed, which resemble the fourth layer of the cortex (polymorphous cells).

Consequently there exists a particular type of the microcephalic brain which is characterized by richness of the grey matter and deficiency of the white matter, which is accompanied by microgyri. This type is distinguished from the ordinary type of microcephalic brain by the fact that, although there is a general lack of nerve tissue, yet the proportion between the grey and white matter is preserved. After this particular type proper to certain microcephalic brains in which the arrest of development is more advanced, come the brains of certain semi-microcephalous cases, in which the arrest of development of the white matter attains a less degree and is accompanied by diffuse, sub-corticle heterotropia of the grey matter. But in these two cases the type remains the same and its special character consists in this: that between the grey matter of the hemispheres and the centrum semi-ovale the nerve tissue is frequently found in a true state of arrested development (shown by the presence of neuroblasts), and in other cases in a deviation of development (shown by the presence of elements resembling ganglionic cells of the last layer of the cortex).

Upon the microscopical preparations made from microcephalic brains with microgyri which I presented this year to the Society of Psychiatry at St. Petersburg, we have been able to demonstrate: Upon a section of the frontal lobe (right) and stained by Wiegert's method, the thickness of the walls of the hemisphere from the top of the convolution to the ependyma of the ventricle

	-	-	-	-	11mm.
Thickness of the white matter	-	-	-	-	4 "
" " grey	-	-	-	-	7 "
" " corticle layer only	-	-	-	-	2.5 "
" " layer of neuroblasts	-	-	-	-	4.5 "

Upon a section made of the right temporal lobe:

Thickness of the wall of the hemisphere	-	-	-	7mm.
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"	"	white matter	-	-	-	-	2	"
"	"	grey "	-	-	-	-	5	"
"	"	corticle layer only	-	-	-	-	2	"
"	"	layer of neuroblasts	-	-	-	-	3	"

One observes in the corticle layer small and large pyramidal cells arranged in layers sometimes irregular, and in the frontal and ascending parietal convolutions some veritable giant cells which by Lenhossek's stain show chromophil particles. The greatest length of the giant cells is 0.070 millimeters and their greatest width 0.015 millimeters.

The superior layer of the grey matter was greatly developed, especially in the region of the fissure (very shallow) under which the substance of the cortex seems to arise from the fusion of the two neighboring convolutions, and at this point the layer attains sometimes the thickness of two millimeters but at the summit of the convolution is only 0.2mm. to 0.4mm. thick.

The fasciculi radiata were very small. Their greatest thickness at the base (before spreading) reached sometimes 3 millimeters (frontal lobes), but the greater part were a great deal less, very often not exceeding 1 millimeter.

As for the transverse fibers of the cortex, we have found them in some preparations from the zonal layer very poorly defined. But we have found neither super-radial net work* nor the striæ of Baillarger, of Vic-d'Azyr, nor the external association fibers of Meynert. The short association fibers of the white matter, or U fibers, which were so well developed in the cases of Meine and Matell, were also lacking.

In the long fasciculi of association, one can distinguish in sections prepared by the method of Wiegert the tough commissural fibers very well developed and a rudiment of the inferior longitudinal fasciculus with some rays of Gratiolet; and one is able to observe a small fasciculus of white matter at least a half-millimeter thick, found upon a vertico-transverse section passing through the precuneus.

The layer of neuroblasts is formed of spherical, pyriform, and oval cells with a slight amount of protoplasm, transparent and with the nucleus very distinct; their greatest size is from 0.010 to 0.012 millimeters, their greatest length being 0.018 millimeters.

One observes also in these preparations, in the white matter of the hemispheres, true ganglion cells either pyramidal or polymorphous. These are isolated, very rare and scattered, never being collected so as to form islets in the white matter. On the other hand, in the zonal layer of the cortex ganglionic cells of large size are frequently found recalling the large pyramidal cells of the third layer. Thus is proven hypertrophy of the ganglionic cells of the sub-corticle white matter and also of the large pyramidal cells of the zonal layer.

The examination of idiot brains of which we have shown the principal anatomico-pathological features brings us, in the first place, to

*Feutrage super-radiaire.

the conclusion that richness of gray matter and an abundance of nerve cells can accompany idiocy. But in these cases the system uniting the convolutions is arrested in its development, and this loss of ways of communication, this lack of harmony in the development of the different nerve elements, renders imperfect an organ so prodigiously endowed in some respects and so poor in others. But in the central nervous system all depends not on the quantity but on the quality of the elements and of their mutual combinations. In this way the white matter is only the continuation of the prolongations of the cells; so the richness of the ramifications of the dendrites and the axis-cylinders of these cells favors the development of the white matter, and the poverty of these ramifications renders its development insufficient. So in the brains where the white matter is poorly developed, the nerve cells ought to be poor in prolongations and their functions either very feeble or abolished. The multiplication and the great extent of the connections of the pyramidal cells seems to be one of the principal conditions of the manifestation of intellectual ability. But intellectual supremacy seems then to be less the result of the number than of the multiplicity and extent of their connection (Dejerine). Consequently richness in nerve cells can co-exist with idiocy, if the cells are deprived of their many and extended ramifications, for thus are lacking the ways by which the nerve forces are propagated, accumulated and combined.

The large size of the neuroblastic layer in the hemispheres of idiots, which indicates a true arrest of development of certain parts of the brain tissue, produces without doubt insufficiency of those nerve functions which are joined to manifestations of intellection. But the neuroblasts in favorable conditions of nutrition are able, perhaps, to transform themselves into elements of a higher order, that is, into nerve cells. In the layer of neuroblasts are sometimes found polymorphous cells. Thus the neuroblasts which preserve for a certain time their embryonic form and which are found in a state of functional lethargy are able under the influence of a proper impulsion to transform themselves into nerve cells and contribute to the enhancing of the cerebral functions. In some such way perhaps can be explained the cases of hopeless idiocy in which occur, in a manner to us incomprehensible, a notable amelioration of their intellectual condition. The idiot appears to awaken from a prolonged sleep, yet preserving for all time the stamp of his intellectual infirmity, but in a degree less pronounced.

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EDITORIAL.

Prophylaxis.—The continued growth of our institutions, and the demand for increased accommodations due to the pressure of the waiting list are giving rise, in many quarters, to consideration and discussion of means of prophylaxis. The long term—practically for life—during which the children must be kept in an institution makes larger accommodations necessary and materially increases the expense and gives increased emphasis to such considerations.

Recently efforts have been directed toward the suppression of the marriage relation between the unfit, for while the problem of heredity is but vaguely understood, yet it is firmly believed by those of large experience with defective humanity, that there are certain physical and mental conditions in the parent which render very improbable the advent of healthy offspring. During the last winter bills to this end have been before the legislatures of Colorado, Indiana, Minnesota,

Pennsylvania and Wisconsin. These bills sought to prohibit marriage between persons either one of whom was subject to dipsomania, insanity, epilepsy, feeble-mindedness, syphilis, tuberculosis, or venereal disease. To this end a certificate from a medical board stating that the persons desirous of being married were not subject to the above conditions was made necessary in order that a license might be issued.

In Minnesota the bill became a law but applied only to the insane, feeble-minded and epileptic when the woman is under forty-five years of age. The medical board was eliminated and the clerk of the court was made responsible, in that he was forbidden to issue the license if *he knew* either party to be subject to the above conditions. In practice this knowledge will probably be very limited in its effect, for it seems to be the general feeling that marriage is an inborn right of the sexes. While the law can not make men righteous, and the common law marriage can not be prevented, yet it seems that the marriage law is at least a step in the right direction. It can at least be made "to pay" if it stops one of these unfortunates from being brought into the world.

In Pennsylvania they have made an attempt to get at the matter in another way and at the same time ameliorate the condition of the child. A bill has been introduced and passed by the House providing for the unsexing of certain degenerate persons when such is recommended by a committee composed of a surgeon, a neurologist and the superintendent of the institution in which the person resides.

Others are seeking this same end by means of segregation. And this is probably our most available prophylactic measure. But in order to reap its full benefit it entails much more extended accommodations than any state as yet affords. A better result could be obtained in many states if the state would obtain control of the child when it is admitted to an institution or declared an imbecile. However, progress is being made in this direction. A law was passed in Indiana this last winter providing for the care of adult imbecile women in the School for the Feeble-Minded until they reach the age of forty-five years.

In Connecticut the state retains control of all persons declared imbeciles, the town officers being made responsible, and the women being kept in the almshouses.



NOTES AND ABSTRACTS.

Provision for the Feeble-Minded in Glasgow, Scotland.—Dr. W. W. Ireland writes that the Glasgow Parish Council, who have within their area about half a million of inhabitants, are beginning to make special provision for the idiots and imbeciles dependent upon them. They have erected a building for some of these cases within the grounds of Wood-

ilee Asylum, at Lenzie, which will be under the charge of one of the resident medical officers. The house is well adapted for the purpose, and is well furnished, bright and cheerful. It is to be hoped that the Parish Council will go on in the same path. They already have special classes for feeble-minded children in one of the board schools.

The Influence of Alcoholism on the Production of Idiocy and Epilepsy.—The child is subjected to the consequences of alcoholism in a number of ways: 1. The chronic alcoholism of the father, mother or both; 2. Drunkenness at the time of conception; 3. During foetal life from blows received by the mother or from emotion experienced by her during pregnancy; 4. The same emotions during nursing and later.

Two thousand seventy-two boys and 482 girls, idiots, epileptics, imbeciles or hysterics have been received, the first at Bicêtre, since Oct., 1879, the second at the Fondation Vallée since March, 1890, up to Dec. 31, 1900, a total of 2554.

STATISTICAL TABLE.

	BOYS	GIRLS	TOTAL	
The fathers of	785	148	933	drank to excess.
The mothers of	67	13	80	" "
The Parents of	30	10	40	" "
Of	340	110	450	we have no records.
The parents of	850	201	1051	were sober.
Total	2072	482	2554	

Conception during the drunkenness of the father has been found in 235 cases and probably in 86 others. This makes, counting these last, 12.5% of the children conceived during drunkenness, not counting the 450 of which we have no record and the 732 of which we have no record of their conception. Finding the percentage in the different classes we have,

36.5 per cent of whom the fathers drank to excess.			
3.1	"	"	mothers " "
1.5	"	"	parents " "
Or 41.1	"	"	one or both parents drank to excess.
41.1	"	"	were sober.

These statistics bring our previous statistics on this subject up to Dec. 31, 1900. And they clearly show the fatal action of alcoholism. Those who are interested in this subject can find a large number of clinical and anatomical observations in detail on this subject in the *Comptes Rendus de Bicêtre*, 1880-1900.

Dr. Bourneville in the *Progrès Médicale*.

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ORIGINAL ARTICLES.

PRESIDENT'S ADDRESS--TWENTY-FIFTH ANNUAL CONVENTION OF ASSOCIATION OF MEDICAL OFFICERS OF INSTITUTIONS FOR THE FEEBLE-MINDED.

BY W. A. POLGLASE, M. D., MEDICAL SUPERINTENDENT MICHIGAN HOME FOR THE FEEBLE-MINDED AND EPILEPTIC, LAPEER, MICHIGAN.

IN fulfilling my official duty as your retiring president it will be my earnest endeavor to merit the confidence you have shown, and I earnestly hope the deliberations of our association will be a profit to to us all, and may the nature of the work in which we are engaged make our associations ever more sympathetic and firmer. Having already entered the portals of a new century with the most marvelous possibilities confronting us in the fields of scientific investigation, and the developments in the facts and phenomena of life, we realize the keynote of the past century has been of marvelous progress and will pass into history as the greatest the world has ever known. There are those who think it the greatest in all the human period. Its greatness is more varied and farther reaching in its effects than any of its competitors. This progress has not been made with an even pace nor in straight lines. It often resembles the path of a child lost in the woods. It is always thus with the course of human history and is not unlike many expressions of force in nature.

Herbert Spencer and others have pointed out the fact that all natural movements appear in rhythmic form. They vary in intensity. They rise and fall in obedience to some hidden law. The mind never flows in a steady current, but in successive impulses. All the sea waves are not of equal height. Each seventh billow surpasses the six which precede it. The body of water in our great lakes steadily declines for a few years and then gradually returns to its old level. Tyr-

dall says the fall of a cataract is not uniform in its action. At regular intervals the flood swells then shrinks to its former volume. Heard at a distance the strains of music come with more then with less clearness.

Even the heart beats and the breathing of a sleeping child are variable in their action. The individual mind works in the same way. Today thought comes in a flood and creation is a delight. Tomorrow the mind seems empty and its doors and windows are barred against inspiration. The historic ages of man show this rising and falling movement; after a long period of dullness humanity becomes fully awakened and abounds in activity. The era in the early history of Egyptian civilization when a highly humane and remedial treatment of the defective obtained, the methods being not markedly different in principal from that of the present day, is a strong contrast with the treatment accorded them in the middle ages and even up to the middle of the eighteenth century when the idiot and lunatic were regarded as something inhuman and treated brutally and shamefully in measure according to the evil possessions attributed to him. Bursting out of this long historic period at intervals were eras when human greatness shone like a genial summer time. The age of Pericles, the Augustan age, the Renaissance and Elizabethian era are such fruitful periods. The XIII century in the Christian period marks the awakening of the human mind after its long slumber in the middle ages. It was the beginning of modern civilization. But that century was only great for Europe. Asia was not influenced by it, and America was not discovered. Of course, this and all the other centuries that have been notable have helped make the greatness of the XIX century, and also in a measure have carried with their virtues the degeneracy of their vices and sins. Consciously, or unconsciously, our age is indebted to every other age for its greatness and power as it is for its weakness.

The opening of the XIX century was a high wave-period of the awakening of human civilization. Then began an era not only of material and moral progress but an appreciation of the value of human life. Human freedom was planted in America and a new school of humanitarianism began. While the nucleus of our special work and literature also began at this time, it was in the middle of our century that it was established under state patronage. This period was favorable to new ideas regarding the physical and spiritual welfare of mankind. It was the golden age of American literature. Poets, prophets and reformers abounded. A new creative genius was in the air; and under its gentle but powerful influence everything was being transformed. New methods in the education of both the normal and abnormal were evolved. Medicine, surgery and the allied sciences were making rapid strides toward a dawn of startling discoveries.

In fifty years many things occur, but when we think of the amount of time, and even of human history lying back of it, this half century

seems invisible. But to those of us who have passed a great part of our earthly lives within its borders it becomes large and significant. We can easily affirm that there has never been a more notable group of years than the last fifty. The magnitude of the deeds accomplished within its limits that we and our work are related to would be beyond the limits of the hour to relate. The external and internal history of our work, struggle and progress has been presented to this association for years past, and, therefore, needs but brief mention at the present time. From the formal establishment of our work in a small institution just before the dawn of this period to the present, are recorded the enrollment of more than a score of large institutions, with the addition of many private schools throughout the various states of the union. From a primitive cottage for the care of twenty has gradually developed the colony with its large acreage and modern buildings giving an almost ideal separation of the various grades of defects. While the essential principles of training promulgated by the earliest pioneer are still our sheet-anchor, much advance has been made in the application of the means to the desired end, to make all but the absolutely helpless contribute wholly or in part to their own support. The adoption of a policy for the segregation and life-long detention of all defectives.

The advance in methods of training and care of the defectives has called for more skillful and specially equipped attendants and nurses, so that a number of institutions have established training schools within their own border and jurisdiction with commendable results. In the school and manual departments are now employed specialty teachers, and the result is a larger number of inmates who are capable wage earners. Several of our institutions have adopted the system of paying inmates, where the productive or useful power of the individual was in excess of his maintenance.

The adoption of psycho-pathological laboratories and a department for the study and application of the principles of psychology to abnormal data as found in our defective classes, is an indication that we are keenly abreast of the times. We are glad to note the almost total abolishment by the leaders in the medical profession of the misapplication to normality. These and other advances should make us self-gratulatory of our progress. Looking back over the half century, and seeing rise out of the silent years the forms of many noble men and women whose lives were spent in toil and love for this work, our hearts grow very tender. We will not pronounce their names but will recall them in silence. Let us trust they have all found the good they craved and for which they worked.

The last quarter of the past century gave birth to this association that this summer reaches its twenty-five full years of maturity. In its conception the soul and heart of its founders were infused into it for our helpful inspiration. It is a well established principle that increase of

opportunity enlarges obligation. Hence, a life, or an association, whose career lies within these years of great mental activity and colossal achievement, has duties resting upon it equal to its advantages and endowments. We cannot live a restricted existence but singly, and, as an association, must take up the obligations of society and science wherever related to our work, and become the agent of reason and knowledge in its specialty.

A review of the doings of the society shows a magnificent work done from year to year. Its records show much unanimity of action, and the accomplishment of many hopes and the carrying into operation many recommendations of its members.

There are some topics of vital importance that have been discussed heretofore by the association that have not received either the condemnation or official adoption of this society, and to these I shall simply call your attention without detail. It is true, our institutions are subject to the variations to control and exercise of function by different states, yet many measures for common good and advancement should be generally adopted by all. I believe this society should put itself on record by official adoption after due consideration of a classification of the feeble-minded disassociated from that of insanity: a form of commitment that would be less lax than that in general use, hence, giving specific control of the inmate from the interference of irresponsible outsiders. The attitude of the society should be officially declared upon two topics so vital in importance as to be the burden of the president's scholarly address presented four years ago at the meeting of this association at Orillia, and whose sentiments there expressed have been formulated and adopted as a law in several of our states. I refer to the law restricting the marriage of the unfit, and the discussion going on in several others of the advisability of legalizing the operation of a sexualization under certain restrictions.

I feel that a word in commendation of the JOURNAL published under the auspices of this association should be spoken. I believe if the individual members of this association would determine to give but a small measure of their time for its pages, it would make the labor of the indefatigable editor a joy. I being not less guilty of this sin of neglect than the rest of you, call attention to the vast importance of contributing by our best efforts to its success.

In the century whose portals we have passed, life will go forward much as it has in the past. The sun will shine, the stars will gleam, rains and snows will fall, and rivers will seek the oceans. Men and women will love; children will laugh and sing; many will sin, and then grieve and repent; fortunes will be made, and lost; reputation will dazzle the public eye; fame and power will be sought. But will the era be one of entire success? Will crime and vice exist beneath external grandeur; will there be injustice, fraud and disregard of integrity; will there be drunkenness, immorality, poverty and distress; if so, will

the criminal and imbecile abound? Undoubtedly the burden of the present, as it has been in the past, is prevention; and it is the burden of its solution that lies heavily upon our shoulders. With all our growth of institutions we learn ninety per cent are without care or supervision; and, with the knowledge that at least fifty per cent of increase could be stopped, we can but hope and work. As we look into the future, encouraged by the successful work of the past, we are filled with the hope that inspired Pasteur, when he said, "I hold the invincible belief that science and peace will be victorious over ignorance and war; that the nations will agree not to destroy, but to build up, and that the future will belong to those who shall have done most for suffering humanity."



INSTINCTS AND EMOTIONS OF THE FEEBLE-MINDED.

BY A. R. T. WYLIE, PH. D., FARIBAULT, MINN.

IN considering the feeble-minded child as an active or behaving organism, and it is as such that he is of importance to the state, it is necessary to study the fundamental bases of action. These bases or instincts are modes of behavior, which were advantageous to our ancestors, and are dependent upon an inherited nervous mechanism, the feeling which accompanies the action being called an emotion. As the distinction between instinct and emotion is chiefly one of view point, it will be found expedient to consider them together.

The instincts appear at different periods in the child's life, depending upon the proper condition or "ripening" of the nervous mechanism and the presentation of the proper stimulus at this time. The resulting action produces a corresponding mental impression or picture and thereby adds to the conscious wealth of the individual. Thus arises the power of instinctive prevision. And as events happening in consciousness carry with them the power to be recalled, thus arise the mental pictures or ideas which are the basis of will, for it is very evident that we can not will that of which we have no idea. In order that an animal should attend to any object in his environment, it is necessary that his organism and sense organs should be so adjusted as to be acted upon or stimulated by this object, and this in the first instance, must be instinctive. Thus arise attention, perception, memory and volition. The action of consciousness transforms not only the material thus given it, but also the instincts themselves, so that in the human race they lose to a greater or less extent the definiteness and fixedness which characterize them in the animal world.

However, if the proper stimulus is not presented when the nervous mechanism is "ripe," and the environmental conditions are not suitable for the performance of the act, the instinct is aborted and no more

appears in the life of the organism. Hence, unless the instinct is fixed by habit, it does not persist.

From the standpoint of the emotion the expression is a constituent part of it, consequently, the feeling and the expression do not stand in the casual relation to each other, but both form one whole. Hence, when the expression is deficient or poorly developed the feeling must necessarily be lacking in vigor and tone. And defect in instincts can be due either to defective nerve mechanism or environment, especially at the critical period in their growth.

In this study of the instincts and emotions of the feeble-minded the method used was to question those most intimately acquainted with the children as to presence and manifestation of the various instincts and emotions. While subject to considerable error this was found to be the only method available. The number of children examined was seventy-six, and for the purposes of this paper they were divided into three classes. The first class comprises those who have not been able to learn anything from experience. The third class comprises those who can learn to read and write so as to gain both profit and pleasure. In numbers they can usually get as far as long division, and while not able to support themselves, their labor is of considerable economic value. They comprise our highest grade cases. Class two includes those between classes one and three.

The determination of the prevailing emotional tone is particularly difficult, especially among the lower grades. Their sense dullness and their lessened reaction to mental stimuli which we have found on subjecting them to experimental determination would give a basis for this. And as far as can be determined from the outside they are very probably subject, to a great extent, to neutral or indifferent feelings concerning which there has been considerable discussion as to their presence among normal people. Mental states are considered neutral when they have no "fringe feelings" of being agreeable or disagreeable. However, this would agree with our theoretical considerations as well as with our experimental results of a lessened reaction.

Admitting the presence of indifferent feelings, the feeling of well-being is not found to any marked extent among our lower grades. The pain sense being dull, as we have found,* the general feeling of malaise is rare. In Class III cases of euphoria and malaise are very evident.

The apathetic disposition belongs to the lower grades, especially to what we have indicated as Classes I and II. Denoting a lack of reaction to both internal and external stimuli, it shows a want of cerebral activity. The active disposition, on the other hand, belongs to the more intelligent; but, it is also found among those of the lowest grades and here probably means a purely local expenditure of nervous energy.

Excitability is found in all degrees of mental defect but, is more marked among the higher grades.

*Journal of Psycho-Asthenics Vol. III, page 140.

Irritability is a symptom of nervous fatigue. The most marked cases of it are found in Class III and it was not found at all in Class I. This agrees with the result of our investigation concerning fatigue, which we did not find marked among the lower grades, as they did not seem able to expend their nerve forces so as to produce such a condition.

Obstinacy is also characteristic of the more intelligent children, it having been noticed among at least two-thirds of them. Psychologically it is based upon the contracted mental fields of its possessor as well as a magnified idea of his own importance. However, when found among the lower grades it is probably of a more reflex nature due to the condition brought about by the destructive disease processes.

The instincts which have to do with the nutrition of the body are of the most fundamental importance to the individual and appear earliest in the growth of the child, and it is through disturbance or delay in these that one is first led to suspect mental deficiency. This appears however only in the most aggravated cases. Sucking, biting, clasping, and carrying to mouth are generally present when the child is placed under institutional care. Yet we found one case in Class I in which only the first was present and probably ten per cent of Class II will not feed themselves. Normal children usually show these instincts during the first five months. Hunger and thirst also appear early. Among feeble-minded children they are more commonly absent than those just mentioned, but they appear among three-fourths of those who will not feed themselves. Gluttony is characteristic of all grades of the children, but possibly more marked among the lower grades where we also find gormandizing. The feeling of nausea has been found by Preyer to be developed later than hunger and thirst, hence a greater delay and possible absence among the feeble-minded. This, together with the taste dullness which we have found, may account for the various perversions which are noticed, such as the eating of pebbles, rags, dirt, bugs, as well as the more disgusting skatophagy.* The absence of disgust is no doubt explained by the same considerations. Cleanliness is almost an absent virtue among the feeble-minded, which is no doubt due in great part to their sense dullness. Limited to daily habits we find it entirely absent among those in Class I and among about two-thirds of Class II. Here we frequently find individuals who seem to enjoy filth. Continued uncleanness in this respect is a bad symptom as indicative of intellectual amelioration.

As a rule, feeble-minded children sleep well, although there are marked exceptions to this rule. This exception is found among the nervous and irritable and does not in any way depend on their intellectual condition. Cases have been found in which it has seemed to be almost entirely absent.

For the individual the instincts of relation lie next in importance

*Rumination is sometimes found among the lower grades.

to those of nutrition. The more fundamental body movements as holding up the head, sitting, standing and walking were found among all classes of the children. In one case in Class I all the instincts in this group were absent except holding up the head. Absence of locomotion was found in two cases which belong to Class II. The tendency and ability to climb was found only in Classes II and III. In some individuals it is found to a very marked extent for they seem to be climbing about all the time and become very expert in it. These cases belong to Class II. Vocalization is found in all grades, being only rarely absent in Class I.

Pain as a result of dermal stimulation we have previously investigated and found to be dull. Crying, which appears early in normal children, we found among all grades of the feeble-minded. A few cases in Class II did not show it and a somewhat larger number could cry but did not shed tears. Grief is found only among the more intelligent children. Auto-mutilation occurs rarely and then frequently as an expression of anger. It is found only among those of the lowest intelligence.

Pleasure cannot be subjected to experimental determinations like pain but is probably as much reduced. Joy is found only among the most intelligent.

Of the instincts of conservation fear appears first in the growth of the normal child. Preyer noticed it at twenty-three days, Perez at two months and Darwin at four months. Fear was found among all grades of the children but only about one-third of them showing it. Among the rest it had not been observed. This appears as a very low proportion when we consider the importance of the instinct to the individual and its early appearance. Perhaps the protection afforded by institution life may have lessened the occasions which would call it forth; yet we think that if it was at all marked it would have been observed, since some of the most common causes of it can never be excluded, as thunder and noise. So we conclude that the absence of fear is characteristic of them. As to the conditions which excite fear, bodily harm and those things which lead to it stand first, as punishment, pinching, doing forbidden things, etc. Although normal children are caused to fear by noises earlier than by sights, yet noises, thunder and sharp speech appear only half as frequently as those causes just mentioned. Some of the more prominent objects of fear of early childhood as the dark, new strange things and lightning figure only rarely. A bath and "anything" were also given. In Class I fear appears twice, and was caused by the "boys" and a "spanking." In Class II the chief cause was bodily harm. In regard to modes of expression the same deficiency was noted, a variation from type and a limited and less marked reaction. Paleness of the face was the expression most commonly noticed, redness was noted in one case. Some form of vocal expression as talking, begging, and yelling came next in order of frequency. Running and hiding also appear, while trembling, raising

the hands, and crying were infrequently noticed. In Class I fear was expressed by a start, in Class III by talking and growing pale. Thus fear appears more as a mental remnant and is markedly deficient among feeble-minded children. No especially atavistic characteristics were noticed.

In anger we have the instinct of self-preservation appearing in the active form. It has been observed in normal children at the age of two months by Perez and at the age of ten months by Darwin and Preyer. Among feeble-minded children it appears much more commonly than fear, it being noted as absent in only eleven out of seventy-four cases. The most common cause of anger was found to be teasing, and "doing things that they did not want to" came second. A few were so combative that "anything" would give them occasion for the manifestation of this emotion, and one child was thrown into fits of anger simply by pointing a finger at her. The most natural expression of anger by an attack of some sort was found in only one-third of the cases. Talking came next in the order of frequency, and appears in nearly one-third of the cases. Kicking, yelling, and throwing things were found among one-fourth of the children. Thirteen were found to grow red in the face and eight pale. Five were found to bite themselves—these belonged to Class II. One girl would hold her head under the hot water faucet until scalded when angry. Pouting, stamping, tearing around, crying, and threatening also appear. In Class I anger was expressed by kicking, yelling, and growing red in the face and in Classes II and III it is as has just been indicated. Self-control, as a restraining force in the expression of anger, exists to a much greater extent among normal children than among feeble-minded children. Consequently, we find in anger, although it is the most common of the instincts of conservation, the same deficiency and irregularity that we have found in all the others.

Affection, as shown by the desire to fondle and to be fondled, is very common among the children, being perhaps more marked in the duller ones. In fact it lends itself as the most efficient means of their control. Although our returns are not as full in respect to this emotion as desired, yet we think that it is found among at least three-fourths of Class II, and one-half of Class III. Sympathy is also rare. It is found very generally in Class III but is absent in Class I. This is due no doubt to the large intellectual element entering into these emotions. Sociability was not found in Class I, but appeared in nearly three-fourths of Class II, and in nearly all of Class III.

Religious and moral emotion is found to some extent among the brightest feeble-minded children, but is absent among those lower in the scale. This fact has led one French author to observe that religious emotion must therefore be acquired and depend upon intellectual ability. However, children in whom this emotion is said to appear are engrossed by the externals and more materialistic doctrines and

rites to such an extent that true religious emotion does not exist with them.

Play arises from the necessity to expend the surplus energy which has not been required in the necessary activities of life. It is an overflow phenomenon. And where this surplus energy is small, play is either very much diminished or does not appear. The surplus energy of the feeble-minded is small and decreases as we go down the intellectual scale; consequently, we would expect to find play only among the more intelligent and then only in its rudest and simplest forms. Play was found to exist among all grades of our children and to the extent of fully three-fourths of Classes II and III. Running, frequently the one after the other, was the most common form shown. Handling things, as blocks, rags, cards and dolls, throwing things, and playing in the water came next in the scale of popularity. The games mentioned were for the most part simple. Ball is probably the most common. Their performance, however, if left to their own initiative, would hardly be called a game, as it consists chiefly in throwing and catching the ball and sometimes batting it. In football, kicking it about the ground is all that they would do. Games of acting or imitation of something that they have experienced or some portion of their daily routine are found sometimes; as "school," or "nightwatch," and in some cases they are carried out remarkably well, but in these instances one finds that they are managed or controlled by one of the most intelligent and the rest are simply figure heads or doing as they are told.

Smiling and laughing are generally present and the cases are rare in which they never have been noticed. Two children in Class II were found in whom smiling was present but not laughing. However, these instincts play a much less prominent part in the life of an imbecile than in that of a normal child.

The instinct of imitation was found among half of those in Class II, and in nearly all of Class III. It has been mentioned frequently as characteristic of the Mongolian type. Here, however, it seems to be mechanical and does not lead to any higher results in mental development; chiefly, perhaps, on account of the lack of the instinct of construction and of individual initiative.

Curiosity, the instinct which lies at the basis of all intellectual advance, is found among all of Class III, and among about two-thirds of Class II, but not at all in Class I. Pride is very common among all grades of the children, being shown most frequently on account of new clothes.

Self-esteem is general among the brighter children, and is found in two-thirds of those in Class II. Their estimate of their own abilities is always of the highest, and they do not hesitate to enter upon the greatest undertakings with the smallest intellectual capital. It would seem that the knowledge of one's own deficiencies must stand at the top of the intellectual scale. On the basis of this instinct of self-esteem one can generally appeal successfully to their spirit of rivalry in order

to get them to do something. Suicide has been found among the feeble-minded, but is rare.

Shame is found in those in Class III, and in one-third of Class II, but not in Class I. It depends upon a certain amount of self-consciousness; consequently, it is found only in the highest grades. This appears as an atavistic trait in them. Blushing rarely appears and then only in the highest grade.

Acquisitiveness or appropriation has been found in the lower animals. A collection of the California wood rat consisted of nails, strings, knives, forks, tools, an old purse, some tobacco, several augers, and a great number of other things. This instinct is shown by about fifty per cent of the feeble-minded above Class I. With them it is manifested by filling their pockets or boxes with all sorts of trash, as strings, rags, pieces of paper, nails, pins, or anything they happen to find. The pockets of a certain number of them must be unloaded at intervals in order to keep them in bounds. Sometimes they have specialties, like one boy who collects suspenders, unraveling them and hoarding the string.

Constructiveness is found to a marked extent only in the highest grade, where it is exhibited by about fifty per cent. In Class II only about one-sixth show any signs of it. In Class I it was not found. The lack of this instinct is also shown in the defective play, and the unproductiveness of the instinct of imitation, which is well marked in some. Destructiveness, which is allied closely with the constructive instinct among normal children, is found chiefly among the lower grades, and decreases in frequency as we go up the scale. It is found in two-thirds of those in Class II, and once in Class I. Stealing, which is quite commonly noticed, probably can be considered only as such in the higher grades, on account of the element of intent which enters; in the lower grades it is probably the activity of the instinct of appropriation.

The instinct of love is the last to appear in the order of growth, and as a rule it is the last to die. Cases have been found where it was present and hunger was not. Feeble-minded children will know of sexual matters when they know nothing else. Its prominence and vitality can be accounted for by its fundamental position in the animal economy, the lack of the inhibitory activity of the higher mental processes, and the defect of contrary instincts as shyness and shame. The chief perversion of the instinct is onanism. Just how prevalent this is is hard to determine. However, there is not much doubt that it is practiced by at least fifty per cent of the children, and eighty per cent probably is nearer the facts in the case. In the lowest grade children it is very prevalent, and by some authors is considered an automatic motion; however this may be, still it must be considered as the manifestation of an instinct. The perversion of homo-sexuality is found, but in these cases is probably a mutual onanism. This instinct, from the

time of its appearance in the life of the feeble-minded child, plays a leading role. This fact, emphasized by the teachings of the laws of heredity, is the chief claim for their recognition by the state, and lays the basis for its own defence in their sequestration and legal control.

The defective expression of the instincts and emotions, its fragmentary character lacking in fullness and vigor, has been very noticeable in all; but especially in those which we have treated more at length, fear, anger, and play. This also was shown very clearly in some experiments made by the author with the stethograph. The endeavor was to see what influence, if any, a disagreeable sensation would have on the form of the respiratory curve. This was produced in most cases by tasting quinine. This disturbance was found to be very slight in the duller children in Class II, but was increased very markedly as we approached the normal. Consequently, with a defective expression we would find correlated deficient feeling.

There were six cases in Class I whose ages ranged from eight to seventeen years. They all had the instincts of sucking, biting, smiling, and holding up the head. These show themselves in normal children during the first four months. In addition, five showed carrying to the mouth, sitting up, standing and walking. Four showed laughter, and turning head aside as a sign of negation. These appear in normal children from the fifth to the twelfth month. Three showed anger and play which appear in normal children at about four months. Anger was caused by "anything," and by being teased, and was shown by yelling, screaming, kicking, and rolling on the floor, or by biting themselves. Play was shown by running around and handling things. Two could vocalize, and practiced onanism. All other instincts were absent.

All of the instincts were found in Classes II and III in varying proportion and degree, but increasing in number and completeness as the intelligence increased. The group of instincts dealing with nutrition was practically represented in all cases in Classes II and III. Fear was found in only half the cases in both classes, while anger was found in eighty per cent of Class II, and in all of Class III. The group of instincts coming under affection appeared in three-fourths of Class II, and nearly all of Class III. The play group appeared in two-thirds of Class II, and in ninety per cent of Class III. Curiosity, and its group of instincts, appeared in two-thirds of Class II, and in all of Class III. The self-feeling group appeared in one-half of Class II, and in all of Class III. Love appeared in fifty to eighty per cent of Class II, and in all of Class III.

In the order of appearance we have the nutritional instincts coming first; in fact, from the first day. Fear comes next, having been observed during the first month. Next appear the group of bodily movements, and anger arising as early as the second month. The self-feeling group appear at three years, and love at fourteen years.

In comparing this statement with the instincts as we have found them in the different classes, we can see very plainly the defect and

irregularity in their development in feeble-minded children. Thus, in no sense would it be proper to say that the feeble-minded child is comparable to a normal child whose development has been stopped at a certain stage. They are not children whose brains are undeveloped, but rather children whose mental life shows the wreck and ruin of the disease storm. Perhaps the most striking example of this is in the absence of fear in Class I, while anger appeared in half the children in the class. In Class II anger appeared in eighty per cent, and fear in only fifty per cent. Fear again appears in only fifty per cent of Class III and anger in all. From its appearance in the scheme of development, as well as from considerations of its importance to the individual, fear must be considered as of the most fundamental importance. Romanes places surprise and fear as the first emotions shown in the animal scale, being found among larvæ and worms, which corresponds to the age of three weeks in the child's life, according to his scheme. The same irregularity appears again when the sex-feeling is found, where instincts, which appear much earlier in the genetic scale, are absent.

And not only do we find an abnormal course of development, but also a delayed course of development. Thus, the appearance of many instincts are delayed. The average age at which feeble-minded children are able to walk is two and one-half years. Puberty is also delayed. Among twenty-one girls of Class II we found that the average age at which it appeared was 14.7 years; the maximum being seventeen, and the minimum being twelve. Talking, which arises from an instinctive basis, sometimes does not appear until the eighth or tenth year.

While the atavistic bearing of the instincts was not marked, yet there were several that might be considered as of some importance in such a connection; as shame, love, anger, gluttony, stealing, cleanliness and pain.

Thus, we find that the general mental defect of feeble-minded children is also manifested in their instincts and emotions. In fact the defect here is the basis of the more patent intellectual defect, as we have before indicated. This defect must lie chiefly in the central nervous mechanism, as their conditions of life would supply the proper circumstances for the calling forth of their instincts, at least to a much greater extent than we have found them.

The feeble-minded child is more of an instinctive animal than his normal brother, for his instincts lack the elaboration and inhibition of a higher intelligence. His life in many cases may be considered as purely instinctive. It is on account of these instincts that he is oftentimes a menace to himself and to his friends, and it is by reason of them that he demands the protection and control of the state; it is by means of them that his condition is earliest recognized, and it is to the repression and expression of them that the chief part of his education must be directed. So we wish to emphasize the value and importance

of the most thorough study of the instinctive life of feeble-minded children, for therein we will obtain most useful results.

So we conclude that the feeble-minded are characterised by instincts, which lack both in the fullness of expression and feeling; by the absence of a greater or less number of them; and, consequently, by the lateness and abnormal sequence of their appearance.



A FEW CASES OF RUMINANTS.

BY A. FRUS, CHIEF PHYSICIAN AT EBBERÖDGAARD, DENMARK.

Translated from the Danish by Bertha Jenson, Faribault, Minnesota.

THE process we call rumination, which is natural with some animals, can occur, also, as we know, occasionally with the human being. This abnormality, or what we choose to call it, is rare among them, as in the three hundred years in which it has been observed, we have learned of about only one hundred cases of rumination of man, and every new case is interesting and deserves publicity. It occasionally occurs with a person who apparently is perfectly normal, mentally as well as physically; though it is found most frequently with persons of mental derangements, and particularly with the most degenerate, the very dull insane, and low grade idiots. In this country, Prof. Keller has published at an earlier date three cases, and the following cases have come under my observation here at Ebberödgaard.

CASE I.

I. N. M.—Born February 3d, 1876, and died January 8th, 1898; son of a cottager, or tenant; third child. Nothing abnormal during the period of gestation or birth. When he was four years old he was taken sick with whooping cough, after which there was some difficulty in talking. Later he became entirely dumb and appeared idiotic. He was placed in the Gl. Bakkehus Institute, 1885, and was put in the asylum department as he was very low grade. When received at the Institute there was nothing said about his being a ruminant, and it is not known when it developed.

In 1892 he was removed to the nursery department of Ebberödgaard, and he has been a ruminant ever since he came here. His general appearance indicated nothing especially abnormal. He was well formed, with regular features, and developed in every respect in proportion to his age. His mental capacity was, on the contrary, very limited; he wandered around quite aimlessly; was of a very peaceful temperament, never disturbing nor molesting his associates; but, on the other hand was apt to injure himself by scratching his face. He never spoke a

word, but would occasionally scream; was perfectly cleanly; not an epileptic.

He could feed himself and was very greedy; so much so that he was not satisfied with his own portion, but would snatch the food from others whenever he had a chance. Soon after his copious meals he would bring up the contents of his stomach by retching movements plainly seen. The food came up in large mouthfuls, was masticated again and swallowed. This process lasted usually about half an hour. Occasionally there was a slight vomiting, but as a rule his digestion was in good order and evacuations natural. The composition of the meals seemed to have no influence whatever upon the rumination.

The cause of death was general tuberculosis. At the post mortem we could find nothing to explain this peculiarity, as the stomach itself showed no marked abnormality in its construction, and was not enlarged to any noticeable degree. The wall of the esophagus was perhaps a little thicker than normal, but this may be considered the result of rumination rather than its cause.

CASE II.

A. M. H.—Born November 17th, 1883; daughter of a farmer; one feeble-minded child in the family; a half-brother of the patient was lame in both lower extremities; not a case of consanguinity. The patient was the fourth child in the family; there was nothing abnormal at her birth or during gestation. She was taken sick when two months old, and declared idiotic by a physician when about nine months old. Had suffered from convulsions at an earlier date. She was placed in this Institution in 1892, and her condition has continued unchanged, except that she has developed physically. Hair is red; nothing abnormal about the shape of the head; the face is broad and flat; the mouth open and distorted, giving the appearance of a permanent, idiotic smile. The tongue as a rule protrudes far out of her mouth. She sees a little with the left eye. Otherwise there is no marked abnormality about her appearance. There is a partial lameness of the lower extremities, so that she can stand and walk only with the assistance of some support. As a rule she assumes the "tailor position," with her feet in almost constant motion. She is very low grade; cannot talk at all, and only produces unintelligible sounds; and apparently does not hear. The head and arms are in a constant whirling motion. She cannot help herself at all and is very uncleanly.

Her appetite is good, but she swallows her food without masticating it. Earlier she was a zealous ruminant. Soon after a hearty meal she brought up the contents of her stomach and filled her mouth with it. She easily, and without any sound, brought up the food with gulping movements and stretching of the neck, and the substance now underwent the process of mastication and then again was swallowed. She would sit thus for a long time, apparently until the whole meal was

masticated. She has received only digestible, well minced, and softened food, and no other remedy has been employed, though rumination has stopped entirely now. Occasionally something may come up from the stomach, but is swallowed again without being masticated.

CASE III.

H. E. W.—Born July 23d, 1885; son of a bookbinder. No disposition towards nervous or mental diseases; fifth child; birth perhaps too soon, but otherwise nothing abnormal about it. During the first years he had rickets and did not thrive at all; never has betrayed any signs of intelligence.

He was placed in Ebberödgaard in 1892, and showed at that time no signs of rumination. This weakness seems to have developed gradually since 1895, as a result of habitual vomiting, at first without, and later accompanied by, chronic constipation.

He is small in size, blonde and pale, with a strong tendency to "frost" of fingers and toes. The head is long and narrow; the face apish, with a broad, flat nose, a wide mouth and thick lips. There are no other special deformities; no lameness, though he does not walk well.

He always has been especially low grade; never has spoken or been cleanly; always is fretful and unsusceptible to kindness; occasionally screams. He often suffers from cold; is fond of standing beside the heating apparatus with his arms up around his head; in bed he always lies with feet drawn up, hands around his neck and turned over on his right side, resulting in his hair being partially worn off on that side. He is not an epileptic.

His appetite is good—he eats every thing offered him; gorges himself with clay, grass and earth, whenever he has an opportunity. He does not chew his food. Immediately after his meal he commences to gulp it up, which he does very easily. There is a little stretching of the neck, occasionally accompanied by a slight eructation. The abdomen is contracted slightly at each disgorgement, and at the height of rumination it is drawn in almost constantly. The mouth cavity is entirely filled with food, which is masticated thoroughly and again swallowed. The rumination lasts long, so that apparently the entire contents of the stomach are re-masticated. In the free periods, especially at night, there are frequent vomiting and disgorgements, the substance of the latter being more or less green ("cabbage-like"), and consisting chiefly of mucus from the stomach. On the whole, his digestion seems to be slow, and undoubtedly there is an enlargement of the stomach. The use of a stomach pump several hours after meals, reveals an abundance of food in which the ingredients of the meals are easily discerned.

In place of the earlier constipation, he has suffered of late from diarrhoea. In the beginning this seemed to have a fortunate effect on

the vomition and rumination, but of late they have become as persistent as before.

CASE IV.

N. N.—Born May 6th, 1874; daughter of a mason. The father died of some chest disease. The patient is deaf and dumb. There are four other deaf and dumb children in the family, of which one, who now is dead, also was feeble-minded. She is the third of twelve children. Several of them have died of various acute diseases.

She apparently was dead (asphyxiated) when born, on account of a twisting of the umbilical cord. Her deafness is congenital. She was at the Deaf and Dumb Institute at Fredericia from 1882 until 1891, and the report given of her, when discharged after confirmation, indicated that she made but little progress in literary work, but did very well along industrial lines. She cannot express herself well either in speech or writing. She was brought from home to Ebberödgaard in January, 1893. She has a lively and inquisitive, rather bird-like, physiognomy. The head is high and comes to a point, with a marked flattening of the occiput. The face is long, narrow and pointed, and somewhat asymmetrical; nose, long and crooked; lips, thin; palate, high and narrow; and pharynx to one side. The ears anomalous; otherwise the structure of the body is normal. She is of a pronounced hysterical temperament; very capricious. She becomes very excited on the slightest adversity, and invents one thing after another to cause disturbance and disorder among her associates.

She is a great egotist; intriguing, cunning, and ill-tempered; invents stories, destroys things, etc., to be able to throw the blame on some of her companions. Neither is she afraid to injure herself in order to procure infirmities or feebleness. For example, she kept open a sore on her left hand for several years, and also burned herself with matches on the inside of her left thigh, in order to procure for herself an interesting disease. She is very dexterous, but only likes to do the more dainty work. She cannot endure that another person should be employed at the same thing. If she is given work that interests her, she, as a rule, will take hold of it with such energy, in order to finish it, that she is obliged to go to bed. She is cleanly and tidy. Is not an epileptic.

Upon her return from the Deaf and Dumb Institute, her mother noticed that she was a ruminant in that she immediately, or very soon after her meal, brought up the food,—even to tea and coffee—and masticated it. A gurgling sound accompanied the disgorgement, and the rumination would sometimes last until the next meal. She, however, could cease if requested. When she first came here she also showed a tendency to ruminate, though only in an imperfect degree. She would only bring the food up and then swallow it again, now she spits it out. She is extremely dainty in her food and always is kept on diet, though

will force herself to eat anything she desires, belonging to her associates. She usually suffers from cardialgia with more or less real vomiting, though she never has brought up blood. There is a close relation between cardialgia and her psychical condition, as she comes to the front when the former is worse. As a rule her bowels are in order.

CASE V.

G. R.—Born March 19th, 1887; son of a sculptor. The father is a drinking man, otherwise there is no family skeleton. He is the oldest of three children; gestation and birth normal. No consanguinity. The feeble-mindedness is congenital and was noticed very early. He was placed in Ebberödgaard in 1893.

He is small for his age, and blind. Physiognomy somewhat ape-like, retreating forehead and broad, flat nose. The lower part of the face is broad and prominent; large, thick-lipped mouth; short chin. The structure of the body is otherwise normal.

He is very low grade; cannot talk at all, but utters a murmuring sound when he is excited; drools excessively, and usually has all his fingers in his mouth; is helpless and very uncleanly.

During the last years he has suffered from scrofulous inflammations; and also has a tendency to diarrhoea, which has made it necessary to keep him on diet. But he is quite dainty about his food and does not like anything made from milk. His appetite is somewhat changeable, and he must be fed as he does not chew his food properly. With variable intermissions, not dependent upon the nature of the food, though worse after eating bean soup, he brings up what he has eaten and remasticates it. As a rule this disgorgement occurs immediately after the meal with a slight stretching of the throat without eructation, and there is only a slight drawing-in of the abdomen in connection with it. The whole contents of the stomach are hardly remasticated, and he seems to fall back on rumination when he has nothing else to occupy his mind. Digestion seems to be normal with him, both in regard to time and the chemical processes. He never really vomits. Rumination seems to have developed within the last year on account of his scrofula, since which time he has been obliged to remain in bed, and he became a neighbor of the above named ruminant, H. W., of whom he seems to have learned. It varies with him, but is at present very marked.

Besides these five patients who are or have been pronounced ruminants for longer periods, we have in the Institution several other very low grade individuals who occasionally are able to bring up the food and rechew it. One of them does it, for example, only at times when she has eaten chopped meat, which comes up about an hour after her meal, and this disgorgement is repeated several times in the course of one-half to three-quarters of an hour.

As to what the rumination is due, the various investigations do not

agree. There is no essential difference in construction nor appearance of the ruminant's and the normal person's stomach and what the oldest writers allege in regard to this must be referred to the world of fantasy and legends. Neither does there seem to be any difference in the more delicate structure, and we therefore, are led to consider the phenomena, as some do, a nervous disease without any stated ostensible foundation, or assume it due to an abnormally strong mobility of the stomach occasionally accompanied by an enlargement of the same, or finally to believe it no more or less than a bad habit at times combined with and due to a perverted taste. I should be most inclined to accept the latter view of it.

In all the cases which have come to my knowledge, rumination seems to be an enjoyment to the individual concerned, who, during the process, sits or lies quietly, and, with pleasure, fills his mouth and lets his cheeks distend with recurrent, half-flowing masses of food, which he eagerly begins to work anew, instead of ridding himself of it, which he could easily do, and naturally would do if it were of the least inconvenience to him.

The fact that ruminants do not masticate their food properly the first time, may also be the cause of this bad habit, as they only get the real taste of the food upon remastication. And, as a promotion of the disgorgement, the individuals concerned are usually greedy and overfill their stomach so that there is here, also, a possible chance for an abnormal enlargement and slackness of the walls of the stomach so that a slight pressure of the muscles of the abdomen will cause it "to run over."

The fact that the process may be transferred from one individual to another is also in favor of the view that it is simply a bad habit. As mentioned above, it seems that my Case V must be considered as having risen through such a *psychic* contagion, and I am also familiar, through literature, with a case where a governess transferred rumination to two of her pupils.

That rumination usually occurs with the lowest grade idiots and most stupid insane, also seems to support me in this view, as these people, we all know, are ready subjects to all kinds of perverse habits, especially so far as eating is concerned; often they are indifferent as to what or how they eat if they only can fill themselves. One of the above mentioned temporary ruminants, not described in detail, is not contented with chewing what he brings up, but whenever he vomits will try to gather up the food substance with his hands and put it back in his mouth, and also tries to get hold of and eat what another patient has vomited, whenever he has an opportunity. That a hysterical individual, like the one mentioned above, may fall easily into such a habit, especially if she observes that she thereby makes herself interesting, is also quite explicable; besides, these perversities in different ways are quite common with hysterical people.

The chemical functions of the stomach do not, as a rule, offer any constant changes. With the persons in question there usually is an obstinate constipation, but that this is not necessary is indicated by at least two of the above mentioned cases.

So far as I know, rumination does not seem to be harmful to the individual, and a proper treatment of such cases seems to me out of the question, unless there should be some stomach trouble back of it all, or the patient possesses intelligence enough to learn to repress it.



CRANIECTOMY FOR ARRESTED MENTAL DEVELOPMENT WITH AFTER-HISTORY OF THREE CASES.

DR. J. MOORHEAD MURDOCK, POLK, PENN.

TWO of the cases I will report were operated upon in 1896 and have been under my continuous observation for the past four years. I am not informed as to the date of the operation upon the third child; he came under my observation two years ago and had apparently been operated upon a few months previous to that time. When operated upon, two of the children were six years of age, the other one twelve.

In all three cases the operation consisted of the removal from the calvarium of a transverse strip along the line of the coronal suture, from eight to ten inches long by one-fourth to three-fourths of an inch broad.

CASE I.

A. R.—A girl; was born of strong and healthy Irish parents; the family history good; the labor without unusual incident. The mother had previously given birth to three children, all of whom are of normal mental and physical condition. At the child's birth the father was twenty-three and the mother was twenty-five years of age. At eighteen months the parents say she had a spasm and that she never spoke after that, though the child has used a few words previous to this time. She began to walk in her third year. At six years, before being operated upon, she was untidy in her habits; would soil and wet her clothing during the day and her bed at night; was gluttonous and would swallow things without regard to taste. Sight and hearing were apparently good. There was no marked peculiarity in the form or size of the head; she did not understand words or know when she was addressed. Quoting from a letter from her physician: "Before the operation she would pick up any excrementitious matter and eat it; within twenty-four hours after the operation she objected to taking beef peptonoid on account of the taste."

When six years old she was operated upon, and made a good and

rapid recovery from the operation. One year later she was admitted into the State Institution for Feeble-Minded at Polk. At the date of her admission the only change which could be detected in her condition was that she was possibly more particular as to the choice of her diet. She had, and still has a very strong, baby-like tendency to put everything into her mouth. She has now been in the Institution for three years and has undergone a course of systematic training, being under the care of teachers skilled in the care of the feeble-minded, who have done all they can to improve her habits and develop her intelligence. She has been taught to sit in class with other children, and give some degree of attention to what is going on in the class-room, and to take part in simple kindergarten games. She is, as a rule, cleanly in her habits; she understands what is said to her; can feed herself with a spoon, and put on her clothing with a little assistance. She cannot, however, be induced to try to talk, and while there is undoubted improvement in her condition, and she is infinitely less of a charge to care for than before the operation, the improvement has been in no sense greater than is to be expected from systematic training of imbecile children of her grade. She is undoubtedly a hopeless imbecile.

CASE II.

L. M.—A boy; fifth child of healthy parents; other children sound mentally and physically; apparently normal at birth; said to have hurt his head by a fall when he was two years old. Epilepsy developed when he was three years old. When six years old he was operated upon without benefiting his epilepsy or his mental condition. He is now, at twelve years of age, a hopeless epileptic, and has an average of one or two seizures a day; is filthy in his habits; unsusceptible to training of any kind; cannot feed himself, and is utterly devoid of intelligence.

CASE III.

C. B.—A boy; second child of healthy parents; mother's brother was feeble-minded; learned to walk when three years old; was untidy in his habits. Though he understood many things said to him, he could never be induced to talk. His head was of normal form and size; was operated upon when he was six years old. When admitted into the Institution one year later, his parents were unable to detect any improvement. Under the care of an intelligent nurse he has improved somewhat in his habits; can feed himself, and aids in putting on his clothing. Can understand many things said to him; makes peculiar sounds and noises, but cannot be induced to make any effort towards the formation of words, though he understands their meaning.

None of these children could be classed as microcephalic, nor was there any external evidence of injury to the skull previous to the opera-

tions. The only indication for their performance seems to have been the arrested brain development which, in one case, was associated with epilepsy with the history of a fall, injuring the head when the child was two years old.

Since 1891, when Lennelongue published his first case of craniectomy for microcephalic idiocy, this operation has been a favorite subject of the lay press. Articles, such as "Creating a Mind," which appeared in the *Strand Magazine* in January, 1895, seem to have a remarkable fascination for the general public; and it is surprising with what credulity the exaggerated claims set forth in these articles are accepted by very intelligent people. Such articles, usually illustrated, appear with great regularity in our Sunday newspapers, giving rise to exaggerated hopes in the minds of parents of many idiotic children, who readily see some similarity in the case reported to their own child, and often induce the surgeon to operate upon their child, contrary to the dictates of his better judgement. The after-history of these children is seldom made known, excepting it may be, that some weeks after the operation they are removed from the hospital improved or cured. It is for this reason that I present the after-history of the cases I have here given.

When craniectomy was first suggested for idiocy, it was with the belief that premature ossification of the cranial sutures limited the growth of the brain. Examinations by Prof. Cunningham, of Dublin, and others, of microcephalic skulls and their enclosed brains, would tend to disprove this belief. These examinations indicate that the brain growth is the factor which determines the size of the cranium, and that the cranium grows upon and accommodates itself to the brain, whether the latter be large or small. Brains taken from microcephalic skulls give no indication of compression; are not adherent to the membranes, but are free and separated by well marked sulci, and, as stated by Prof. Cunningham, "it would be quite as rational to operate upon an ape in the hope of producing an access of brain growth as upon the head of a typical microcephalic idiot, or upon the shell of a turtle, with the hope of increasing its size." Another point which must be borne in mind is that the skull capacity is in danger of being decreased after the operation by the contraction of fibrous bands of cicatricial tissue.

The extreme hopelessness of idiocy renders extreme measures justifiable, even at a great risk of life, and though the hope of improvement be small. If we could obtain reliable evidence that one child in ten or twenty, or even a smaller percentage, is benefited by the operation, its performance should be considered a justifiable procedure and unhesitatingly undertaken. However, the three cases reported, and a large number observed, do not show any improvement as a result of this operation, and, notwithstanding the fact that this operation is being performed upon scores of children annually, I know of no authentic

case of idiocy or arrested mental development which has been in the least benefited by this procedure.

Therefore, until we are furnished with the history of some authentic case which has been benefited, craniectomy for idiocy or arrested mental development, founded as it is on faulty pathology, should be most emphatically condemned.

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EDITORIAL.

New Institution for Feeble-Minded in South Dakota.—We are glad to chronicle the fact that South Dakota has made a beginning in the care and training of feeble-minded. By the act of the legislature, approved Mar. 4, 1895, 40,000 acres of land granted to the state for "Other Educational and Charitable Purposes," by act of Congress approved Feb. 22, 1889, was set aside for use of the Northern Hospital for Insane. Rentals and proceeds from sales were to be held "for the use and benefit" of said hospital. As the legislature of 1899 considered that there was a greater need of an institution for feeble-minded than for another hospital for insane, they therefore passed the act given below:

ACT MAKING APPROPRIATION FOR A BUILDING OR BUILDINGS FOR THE FEEBLE-MINDED, ETC.

SECTION I. Makes the Appropriation of \$25,000.00.

SECTION II. Object. The object of the erection and equipment of said building shall be

to provide care and special means of improvement for that class of persons who are born or by disease have become imbecile or feeble-minded; to keep in custody and afford proper care and treatment for all such class of persons, and to provide means of instruction and mental and physical training for all such class as are capable of receiving the same.

SECTION III. Board of Charities and Correction to have Supervision.

The erection of such building shall be under the supervision of the State Board of Charities and Correction, and, to that end, said Board is hereby authorized, and it is hereby made the duty of said Board to examine into and as soon as practicable determine upon the plan of such building, and by what kind of building and equipments therein the good treatment and education of feeble-minded persons will be best subserved, and such inquiry and examination having been made, said State Board of Charities and Correction shall thereupon, in accordance with its best judgment or the judgment of a majority of said Board, and having in view the kind of buildings and equipments which will afford the best facilities for the proper treatment and education of such persons, proceed to the erection and furnishing of said building. Provided, that the determination of said Board, as to the plans of such buildings and the advertisement for bids therefor shall be made not later than the first day of September, A. D., 1899.

SECTION IV. Provides for the location and contracts for the erection of the building and the cost, etc.

SECTION V. Superintendent to be appointed—Duties of.

When such building shall have been completed and equipped and ready for occupancy, said Board shall appoint a competent Superintendent for the Northern Hospital for the Insane, who before entering upon the duties of his office shall give a bond to the State of South Dakota in the sum of Five Thousand Dollars (\$5,000.00) with sureties to be approved by said Board, for the faithful discharge of his duties. He shall have control of the care, treatment and education of the feeble-minded admitted to said building, under the direction of said Board and in accordance with the rules and regulations, to be by said Board established. Under the advice and consent of said Board of Charities and Correction the Superintendent shall appoint a competent matron for such buildings, and competent and experienced instructors for the class or classes of inmates who are capable of being taught. All other employees shall be appointed by the Superintendent, and the compensation of all the officers and employees for the management of said building and the treatment and education of the inmates thereof, shall be fixed by said Board.

SECTION VI. Who may be admitted.

All imbecile, or feeble-minded, persons who have been residents of the State for six months next preceding the application for admission to said building, and who are incapable of receiving instruction in the common schools shall be entitled to be received at such buildings, and maintained and educated at the expense of the State, if in the judgment of the Superintendent the applicant is a suitable person to receive its benefits; and if the capacity of such buildings and their facilities will permit. Persons who are not residents may be admitted, but, for all non-residents, or those not residents of the required time, a fair compensation shall be paid, to be fixed by the Board.

SECTION VII. Clothing and transportation—By whom furnished—Transfer.

Parents, guardians, or those having legal control sending children or wards for care and education to such building, will be required to provide suitable clothing and expense of transportation to and from their homes, unless financially unable to do so, in which case the parents, guardians, or the State's Attorney of the County where such children reside may make application to the County Court and upon a decision of said Court that such children are paupers and unable to procure suitable clothing or furnish transportation as herein provided, and that they are proper subjects for admission, an order shall be made by said Court to that effect and the Judge of said Court shall certify the same to said Superintendent, who shall provide the necessary clothing and transportation and, charge the same to said County and present the account thereof to the State Auditor who, thereupon, shall draw upon the County Treasurer for the amount so charged and said County shall annually assess and collect by a tax, the amount necessary to pay said order, or orders. Subject to the foregoing provisions adult feeble-minded imbecile persons shall be admitted to said buildings under such rules and regulations as said Board shall prescribe, or, until otherwise provided by law, subject to the provisions hereinafter mentioned governing the transfer of patients from the Insane Hospital at Yankton, provided, that no further provisions

or the care and treatment of insane persons shall be made upon this site until such time as the Board of Charities and Correction shall deem necessary.

SECTION VIII: Term defined.

The term "feeble-minded" as used in this act shall be so construed as to include idiotic children and all other children and youth who are incapable by reason of deficient mind, of receiving training or education in the common schools, and all adults of like want of mind or mental capacity not insane. For the care of all such inmates as are incapable of education and training the said Board with the assistance of the Superintendent shall provide in such building a custodial department.

SECTION IX. Feeble-minded persons to be transferred.

When said buildings are ready for the reception of inmates said Board of Charities and Correction, together with the Superintendent of the Hospital for the Insane at Yankton, shall make examination into the condition of the patients detained at such Hospital for the Insane and all patients in said Hospital, who are not insane and who belong to the class known as "feeble-minded" as herein defined shall, under the supervision of said Board, be transferred to said buildings at the Northern Hospital for the Insane at Redfield.

Approved March 30, 1899.

ACT APPROPRIATING AND SETTING APART FORTY THOUSAND ACRES OF LAND FOR THE NORTHERN HOSPITAL FOR THE INSANE.

I. Appropriation of land.

There is here appropriated and set apart for the use and benefit of the Northern Hospital for the Insane, Forty Thousand (40,000) acres of the land granted to the State of South Dakota, for "other educational and charitable purposes," by the Act of Congress, approved February 22nd, 1889, and not otherwise appropriated.

II. Manner of selection of land.

It shall be the duty of the Commissioner of School and Public Lands, State Superintendent of Public Instruction, and the State Auditor, to make the selection of the land appropriated by Section One (1) hereof, within one year from and after the passage and approval of this Act.

III. Rentals and Proceeds of sales—How Appropriated.

Proceeds of all rentals derived from the lands appropriated under this Act, and the proceeds of all sales of the lands so appropriated, shall be held for the use and benefit of the Northern Hospital for the Insane.

Approved March 4th, 1895.

While this institution is known as "The Northern Hospital for Insane," it is really for the care of feeble-minded, and a building will soon be completed and children received.

From Over the Sea.—Were it not for the consciousness of fellow sympathy and especially the manifestations of it shown in the kindly greeting and the unsolicited sympathy, life would be very different. The cares and trials that come to all would be more depressing. The cheery smile, the hearty hand grasp, the jolly welcome and the helpful word of encouragement, make us all feel that life is a good thing and we can shake off our troubles and go on with bright hearts.

The following from one of our *confreer* over the sea, while tinged with a shade of sadness glows with hearty good will and love:—

I hope as long as life may last
To hold the memory of the past,
And keep your friendship ever fast.

So when this little card you see,
A little minute think of me,
And think the kindest that you may,
The brightest of a bygone day.

Long have I lived through joy and pain;
Some days I would not live again,
Yet I have lived them. Now I see
My very griefs are part of me;
To blot them were not like to be.

May peace and happiness attend
Your path of life unto the end,
And let these simple verses prove
I value and would keep your love.

The announcement is at hand of the establishment of the Compton School for Children of Retarded Mentality at 309 Flad Avenue, St. Louis, Mo.

West Virginia is to have a \$50,000 home for epileptics and a \$30,000 home for the feeble-minded at Huntington.



NOTES AND ABSTRACTS.

Sporadic Cretinism is a form of myxœdema due to congenital absence of the thyroid gland. "The important criteria," says Osler, "are the physiognomy, the shape of the head, stunted growth, and the condition of the connective tissue."

The physiognomy is distinctive. The face is large and broad; the features are puffy and blurred; the nose is broad and flat, and depressed at the bridge; the eyes are lustreless and partly obscured by the puffy lids; the cheeks are baggy; the mouth is partially open; the lips are thick and the enlarged tongue protrudes between them. The face, as a whole, is often very repulsive.

The head is expanded in the transverse diameter, and contracted in the antero-posterior diameter, resulting in the condition known as brachycephalous. There is premature ossification of the occipital and sphenoid bones, but ossification of the anterior fontanelle is long delayed.

The child is a dwarf, the growth always being interfered with. The neck and extremities are short and thick; the hands and feet are

thick and broad. The abdomen is prominent, being frequently enormously enlarged. Umbilical hernia is very common.

The condition of the skin and connective tissues in cretinism is always characteristic. The rough, dry skin is wrinkled, thickened, and pendulous. Perspiration rarely or never occurs. The hair is dry, thin, and coarse. The sub-cutaneous tissue of the hands, feet, and eyelids is the seat of a rather firm œdema. These regions are puffy, but do not pit on pressure. In the supra-clavicular fossæ are found very peculiar soft, but elastic swellings, known as fatty tumors of pseudo-lypomata.

The thyroid gland cannot be detected by palpation in most cretins. Göitre may, however, be present. The rule regarding its presence is not an invariable one. In endemic cretinism göitre is common, pseudo-lypomata are rare, in sporadic cretinism pseudo-lypomata are common, göitre is rare.

Impairment of mental power is one of the most constant and important features of cretinism. The mind, like the body, is undeveloped, and its action is extremely sluggish. The degree of mental impairment varies greatly. Some cretins are helpless idiots; others, in which the disease is of a mild type, show simply sluggishness of mental action. Between these extremes are found every degree of mental deficiency. The temperament is usually placid and the child is quiet and contented, and of affectionate disposition. It rarely or never cries or sheds tears. The special senses, while blunted and sluggish in action, are not otherwise impaired.

Most cretins are anæmic, rachitis is not commonly present. The temperature is sub-normal; the action of the heart is not strong. The tendon reflexes are normal. These children are better in warm weather than in cold. The teeth are delayed in their appearance; they decay early, and frequently appear as blackened and unsightly stumps.

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JOURNAL OF PSYCHO-ASTHENICS.

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No. 1

ORIGINAL ARTICLES.

IDIOCY WITH PACHYDERMICAL CACHEXIA.*

BY BOURNEVILLE, PHYSICIAN AT BICÊTRE.

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THE studies which we have pursued, both at la Salpêtrière and at Bicêtre, covering about fifteen years, and the rather scarce notes which have been published during the same period on idiocy, have led us temporarily to distinguish from an anatomo-pathological point of view the following forms:

- 1st. Hydrocephalic Idiocy.
- 2nd. Microcephalic Idiocy.
- 3rd. Idiocy from arrested development of the convolutions.
- 4th. Idiocy from congenital malformation of the brain.
(Parencephalus, absence of the hard matter, etc.)
- 5th. Idiocy from hypertrophied or tuberous sclerosis.
- 6th. Idiocy from atrophied sclerosis.
 - (a) Sclerosis of one hemisphere, or of two hemispheres.
 - (b) " " lobe of the brain.
 - (c) " isolated convolutions.
 - (d) Mortified sclerosis of the brain.

*The translators wish to acknowledge their indebtedness, and express their gratitude to Miss Irene Sargent whose careful revision added to the translation greater accuracy and a liberality of expression previously lacking; and to Dr. James C. Carson at whose suggestion the work was begun and whose encouragement and helpful criticism aided its completion.

7th. Idiocy from meningitis or from chronic meningo-encephalitis.

8th. Idiocy from pachydermical cachexia or myxœdematous idiocy combined with the absence of the thyroid gland.

Our aim in this communication is to furnish a knowledge of myxœdematous idiocy which will constitute an important chapter in the history of this malady, the recent knowledge of which is on the one hand, due to M. Charcot and to his pupils, and to Dr. Morvan; and, on the other hand to English authors, at the head of whom it is proper to place Messrs. Gull, Ord, Hadden, etc. We wish to speak on pachydermical cachexia, or myxœdema.

In 1880 we published the first observation on idiocy with pachydermical cachexia. Since then we have been constantly occupied by this question. A part of the materials which we had gathered has been utilized by one of our pupils, Dr. Bricon, in an essay to which a prize was awarded by the Medico-Psychological Society at their meeting at Belhomme, 1885. We completed the papers and published with him in 1886, a paper based on thirteen observations; then, in 1888, we related new personal or borrowed observations. Before presenting the unpublished documents which we have gathered together, we think it useful to summarize in a table the observations which served as a basis for our first studies.

SEX	AGE [years]	HEIGHT	WEIGHT	AUTOPSY	OBSERVER
Girl	10 [?]	63.5 cm.	.....	Thyroid gland absent	Curling.
..	1 [?]	....	.....	" " "	.....
Boy	8	76 cm.	25 livres.	.....	Hilton Fagge.
..	...	78 cm.	11 kil. 530 gr.	Thyroid gland absent	F. Beach.
..	32	127 cm.	37 kil.	.....	Bourneville.
..	24	90 cm.	21 kil. 100 gr.	Thyroid gland absent	"
..	16	90 cm.	17 kil.	" " "	Bouchand.
Girl	..	....	.....	.....	Charpentier.
..	13	....	.....	.....	Coxwell.
..	25	105 cm.	35 kil. 240 gr.	.....	A. Routh.
Boy	31	....	.....	?	Ball
..	..	....	.....	?	Delasiauve.
Girl	4	....	.....	.....	Goodhart.
..	5	76 cm.	.....	.....	Bourneville.
..	27	89 cm.	.....	.....	"
..	24	86 cm.	.....	.....	Camuset.
..	32	....	.....	.....	Cousot.

Of these seventeen cases, there were five characterized by the complete absence of the thyroid gland; in three other cases, autopsy of the neck was not held. In the living patients, close examination of the cervical region failed to discover the thyroid gland.

We come now to eight new cases, of which three were borrowed from special journals, and five received by us. We now give a rapid analysis of the first ones.

CASE I.

A poor man, almost a beggar, attracted the charity of travelers at the Station of Sagunto, Spain. He was known by the nickname "Quiquorum" to which his innocent buffoonery had given rise. His type recalled that of a cretin, and therefore he had drawn the attention of several doctors; among others that of Dr. Gimeno. This physician, having had occasion to read the works of M. Charcot and his pupils, particularly the observation of Pacha, and the papers of English authors, was led to examine more closely the so-called cretin of Sagunto and had him brought to Valence. He took several photographs of him. "The sketch which accompanies this note," said he, "is a copy of one of these." Here are seen, not so well, however, as in the photograph, the hands, the left leg, and the foot noticeably increased in size, with all the characteristics assigned by foreign medical writers to the myxœdema of Ord or to the pachydermical cachexia of Charcot. Nevertheless, by reason of the limitation of the swelling, which did not extend to any other parts of the body, and which was scarcely discovered in the face, I did not venture to affirm (although I admit, from now on, the similarity between my patient and those who have been observed in England, and in France) that the affection was identical. On account of this fact, as also, on account of the existence of cretinism, I called this pathological deterioration pachydermic cretinoid.

"Some time after, in the *Archives de Neurologie*; a remarkable study upon pachydermical cachexia was published by MM. Bournéville and Bricon, a work in which, after having reviewed all the patients cited by different authors, they said that Charcot, in his travels, had seen two cases of the same disease; the one in Vienna, and the other on the pavement of the station at Sagunto, Spain, which statement gives to my opinion a flattering confirmation."

CASE II.

X....., aged four years. Swedish parents in good health, intelligent and well developed. No instance of a similar disease in the family on either side. The father is a mechanic in a comfortable situation. Two other children, one older and the other younger than the patient, are normal.

The patient is very small (77 $\frac{1}{2}$ cm.). His head is broad. The fontanelles are open, the nose is flattened, the lips are thick and the mouth remains open. In early infancy, the hair was black and curly. It has gradually become blonde, stiff, and rather thick. Above the clavicle, on the outside of the external edge of the sterno-cleidomastoid muscles there are characteristic fatty tumors almost of the size of a hen's egg. Similar fatty tumors, but not so large, exist in the armpits, and in the popliteal spaces ("existent dans les aisselles, au niveau des mollets [?]"). The abdomen is pendent; the ribs pushed slightly aside ("?"). The epiphyses of the different bones are not enlarged. The upper and the lower limbs are very short; the fingers

and the toes are thick. The thyroid gland cannot be felt. The child can stand, but only with help. He has never walked. When excited, makes a croaking noise slightly resembling that heard in stridulous laryngitis, but without dyspnoea. His disposition is mild; his mental development backward. He is an imbecile. Good digestion; habitual constipation. He has never had any disease which might explain the development of myxœdema. The first tooth appeared about the sixth month; the first tumors of the neck about the seventh month, and those of the armpits, a little after.

CASE III.

Dr. Suckling, at the Midland Society, showed a little girl aged four years affected by sporadic cretinism. She was born at Birmingham. Her father, a steady man, died from inflammation of the lungs. A half brother (?), paternal, has an idiot child. A paternal aunt, a confirmed drunkard, is under treatment for alcoholic paralysis. A brother who died in convulsions, following whooping-cough, was well-formed. The mother of the little patient observed that, when the child was very young, the tongue was pendent; afterwards, that there was something peculiar about the voice. The actual condition of the child presents exactly the type of myxœdema; the skin of the face is pale and translucent; false œdema of the upper and lower eyelids; nose broad and flat; lower lip thick, slightly bluish and hanging. The tongue is very large, ordinarily projecting from the mouth; the papillæ enlarged. The skin is generally very harsh, especially on the hands and the feet which are swollen, occasionally bluish. Height 65 cm; weight 10.885 kil.

Circumference of the head 46 cm. The forehead is not very tapering; the occiput is a little prominent; the top of the head is flat. The fontanelles are closed (?). The hair is thin; all the teeth are impaired. The arms and legs are short, the abdomen is not much enlarged. Calm disposition. Speech limited to a few words. Cannot stand. *No trace of the thyroid gland.* Neck short and thick. No fatty tumors in the posterior triangles. Temperature below normal. Urine free from albumen. The condition of the child was not the result of any other disease.

This observation and likewise the preceding one, as they are reported in the records, from which we borrowed these, are very incomplete and the patients do not appear to have been studied with very much care. Dr. Suckling, for example, writes that in the case of his patient, aged only four years, the fontanelles were closed. It is questionable; because as we shall see later, even in the case of patients twenty-five or thirty years old, their persistence is undeniably established.

Our personal observations number five. The first one concerns a little girl whom we exhibited before the medical department of the French Association for the Advancement of Science.

CASE IV.

Father, ague—Paternal grandfather, apoplectic.—Paternal grandmother, drunkenness.—First cousin, paralysis following convulsions; another first cousin subject to these attacks.—Maternal grandfather, apoplectic.—Maternal grandmother, drunkenness.—Maternal uncle, probably apoplectic; maternal aunt, insane.—Consanguinity.—A brother died of convulsions, another an idiot and epileptic; a third has had convulsions.

Confinement, ten months "(?)".—At birth anterior fontanelle, very large.—Umbilical hernia.—First teeth at seven months.—At two years a fall on the face crushing the nose and fracturing the lower maxilla.—Consecutive ozæna.—Development of pachydermical cachexia.—Rachitis.—Description of the patient.—Probable absence of the thyroid gland.—Malformation of one of the great toes.—Dentition.

Wat—Augustine was born at Paris, December 16, 1875. Information furnished by his mother (June 1887).—Father aged fifty-two years, cabinet maker, rather tall and strong, brown hair, aquiline nose, smoked a little and did not drink to excess; he had had no nervous accident, but while in Africa as a soldier in the artillery he contracted the *ague* from which he suffered until fifty years of age. He died in 1888, from a *cancer of the larynx*.

Father, grave-digger, sober, died from an apoplectic attack at 75 years.—Mother, laundress, died from unknown diseases at the age of 72 years; she was weakened; had lost control of excretory organs, but still retained her reason. She drank excessively, especially brandy. No information of the grandparents on either side.—Four brothers healthy, as were also their children, save a little girl who has paralysis of the arm following convulsions. Two sisters died, one at the change of life; the other after three months of sickness at fifty years of age; their children enjoy good health except one daughter of about forty years who falls in fits. These latter appeared about ten years ago, in connection with a fright.—No lunatics, no epileptics, no other paralytics, no deformed ones, no suicides, no criminals in the family,

Mother, fifty-one years, lace maker, rather tall, sober, average intelligence, mild disposition, no nervous accident, light reddish hair, aquiline nose.

Father, tiler, sober, died from an *apoplectic attack* at the age of 65 years.—Mother, housewife, frequently *drank to excess*, brandy especially, died at sixty years of age after an illness of twenty-four hours. "She was thought to be asleep."—No particulars about the grandparents. A paternal aunt, hump-backed, died of cause unknown. Two maternal aunts dead, one the mother of the father of the patient. Three brothers, two died young, one from an unknown cause, the other killed by being kicked in the stomach by another child in a quarrel over marbles. The last one died from a sudden attack while employed at the Rumilly sta-

tion. Five sisters, two died from a disease of the womb, the other from an unknown cause. A third is in a hospital for the insane; she had had convulsions in infancy. The two others are well as also their children. No other lunatics, etc., in the family.

Consanguinity: The mother of the father and that of the mother were sisters and both were alcoholics. One year's difference in age. Both were born at Metz.

Seren children: First, boy, died of convulsions at ten months.—2nd, boy, twenty-three years.—3rd, boy, twenty-one years. healthy, intelligent, no convulsions.—4th, a boy, nineteen years, has had at two different times *convulsions* attributed to worms.—5th, a girl, intelligent, large, strong, no convulsions.—6th, a boy affected with *idiocy* to a pronounced degree and with *epilepsy*. He has never had convulsions. He is in our service and it was through questioning his mother about her family that we had occasion to examine his sister.

Serenth, our patient. Nothing remarkable in the conception which occurred some little time after the father's attack of intermittent fever. Gestation good, save a fall with contusion of the vulva two weeks before the delivery. "This delivery must have been more than a month after term" they assured us. During the two weeks which followed the fall she had suffered much pain and lost some water. The child came suddenly without evacuation of water, contrary to the custom of her other confinements. At birth the child was not in a state of asphyxia; she cried immediately. She had some hair and her eyelashes were long and thick; some hair about the forehead and large nails. She was small; "they called her a doll;" the anterior fontanelle "was very deep" and extended the whole breadth of the head. Nursed by the mother until ten months old; then fed with soup, cow's milk, and wine and water. She began to walk at eight months and in about a year to pronounce some words. "All my children," said the mother, "walked early except the fourth, but were rather tardy about talking." The first tooth came at seven months, the second at eight months. It is not known at what age the first dentition was completed. The child was all right for about a year; she had had no convulsions. It was believed that she resembled other children until two years of age, the time when she fell on her face. Her brother, an idiot, while carrying her slipped on an orange peel and the child was thrown upon the pavement. She did not lose consciousness or have a hemorrhage that day. Six weeks afterward she had a profuse discharge of offensive blood from the nose. Her mother took her to the consultation room of the Hospital Trousseau where they removed the four upper incisors which were loose. From the time of the fall thickening of the cheeks and increase in the size of the abdomen were observed: the umbilical hernia dates from birth. The fatty masses of the neck could not have been in evidence until she was about five. The swelling of the eyelids must have been progressive. One cannot say at what time the feet and the

hands thickened. Before the fall the hair was fine; since then it has become coarse and harsh like horse-hair, and at the same time the scurf of the scalp has appeared. The yellow discoloration of the face must have appeared at five years of age, shortly after the ciliary blepharitis. The child drivelled until ten years old. The bones of the legs became crooked at twelve years and have become rickety. The voice which was normal before the traumatism, they say, has since become modified.

The child busies itself with sewing, crocheting or with making strokes on paper, washing and wiping dishes and sweeping. She can descend and ascend the stairs. She dresses herself almost alone; she buttons her clothes, laces her shoes and puts on her garters. Every thing that she does, she does very slowly. She recognizes every one, is very chaste and appears affectionate. She is not jealous. She is very sensitive to cold; neither cries nor laughs and is not choleric. She repeats every word; calls the names of objects and with some difficulty makes little phrases. She remains sometimes two or three days without talking. She was sent to an asylum where she learned nothing. She walks well and long at a time, but very leisurely; she can walk more than two and a half miles. She has never had tics, onanism, or worms, or ringworm, of the scalp. Sometime after her fall she must have had an abscess of the right leg; the child has never had an eruptive fever.

June 29, 1882.—Height, 77 cm; weight, 12.500 kilogrammes.

June 15, 1887.—Height, 82.5 cm; weight, 13.300 kilogrammes.

This child presents "*in ensemble*" all the phenomena which characterize myxœdematous idiocy.

Head long, with a rather pronounced prominence at the occiput, surmounted by a flat surface. The parietal bosses, rather large, seem to be alike. The forehead is a little square, narrow and four centimetres high. The frontal bosses are scarcely noticeable ("*accusées*"), the left perhaps less than the right. The superciliary arches, slightly projecting, recede at their outer edges, especially on the left. The eyelids are swollen as though œdematous; however, the pressure of the finger leaves no imprint; the fissure is very long. The eyelashes, very long and thick on the upper eyelids, are much shorter and thinner on the lower lids; they are the seat of a chronic ciliary blepharitis.

The palpebral conjunctivæ are a little pale; the oculars are clear; the irises are grey, the pupils uniform. The nose is very much flattened; the nostrils open upward. The flattening of the nose followed traumatism which happened at the age of two years. Since this time chronic purulent rhinitis (*ozæna*) has existed on the two sides; in spite of disinfecting injections the purulent bloody flow exhales a nauseous odor. The cheeks are puffed up, swollen; "they swell out every moment," said the mother. The upper lip is flattened. In the fall, the upper mesial incisors were broken and probably the alveolar edge

of the upper jaw was fractured; whence a loss of substance. The mouth measures four centimetres. The free edge of the upper lip is moderately pronounced. The lower lip is larger and turned down on the outer edge. The tongue is rather thick and is held continually at the edge of the lips; the chin is short. The ears, suitably hemmed, are placed closed to the head, with their lobules adherent. The face is square.

The neck is very short (24.5 cm. circumference), and appears even shorter on account of its habitual forward inclination.

A minute examination of the anterior region of the neck fails to discover the thyroid gland. The rings of the trachea and the thyroid cartilage can be felt, as if they were under the skin without any intervening substance. There exist in the sub-clavicular spaces, pseudo-lipomatous tumors which, according to the mother, are sometimes even more pronounced. "I think," said she "that it is from wind." She stated that when these tumors reach their maximum size and she rubs them in washing the child, the latter vomits as soon as the cold water touches the swellings.

The pectoral region shows a rather pronounced development with a venous plexus having rather small meshes, which plexus is continuous with another having very long meshes on the belly. Venous dilations are found on the shoulders, also, but they are less apparent.

Circumference under the armpits (expiration), 53.5 cm.

Circumference even with the xiphoid cartilage, 52.5 cm.

The left shoulder is a little more prominent and elevated than the right. The chest is short; the back bulges out and the loins are hollow.

The belly is very large and the navel shows a small hernia from 12 to 15 mm. long. The buttocks are rounded.

Genital Organs—The mons veneris is slightly prominent, and without down. The labia majora are somewhat fully developed, the nymphæ reduced to a small border 2mm. wide. No onanism.

Limbs—The arms are short; the elbow joint a little large; the forearms slightly deformed; the styloid apophyses; the hands are rather fat; the pachydermical characteristics are relatively little noticeable. The thighs, as well as the legs, are short. The femurs are crooked, the left more so than the right; the knees are rickety. The legs also are short and exhibit very pronounced rachitic malformations. The feet are flat and slightly swollen. "Sometimes," said the mother, "they are very much swollen, especially at the ankles." The middle toe on each foot is shorter than the neighboring toes.

The skin of the face is of a waxy whiteness. She is light complexioned and has rather fine features(?). On the surface of the back there is a furfuraceous desquamation which, according to the mother, is constant and frequently much more pronounced. This is found also on the forehead surface. The hair, dry and coarse, is a light auburn, rather thick, except on the anterior parts of the parietal regions.

where it is much thinner. The scalp is wrinkled and covered with fine scales and little scabs, which give it a yellowish aspect. This scurf keeps coming in spite of the pains taken to keep it clean. The eyelashes are fine and moderately thick. The rest of the body is without hair. Under the armpits one finds little glands scattered in the cushions of fat, which feel like fatty puffiness. There are small enlarged sub-maxillary glands, and some on each side of the neck of the size of a pea. The mammary glands cannot be felt. The nipple is about 2 or 3 mm in diameter, and projects 1 mm. The areola is very pronounced and measures 5 mm in diameter.

The dentition merits attention. The first teeth (superior mesial incisors) came at eight months. The first dentition, assures the mother, was completed in the first year.

The upper jaw—The two mesial incisors have completely disappeared; the left lateral incisor has been disturbed, and shows from its neck up to a little way from the sharp edge, a blackish color due to the mortification of the pulp which probably followed the old fracture. There is a very pointed left canine; a bicuspid, and one large temporary molar with five cusps. On the right the lateral incisor is wanting; the canine is conoid and excessively pointed. There are also one bicuspid, one large permanent molar, and one in the process of eruption. All the teeth of the upper jaw are covered about the neck by a greenish yellow layer of tartar.

Lower jaw—Two mesial incisors in the process of eruption; their sharp edge is notched like a saw; their anterior face shows the trace of three vertical furrows ending in a small cusp of the sharp edge. In front of these two incisors, one finds a temporary incisor entirely projected outside of the dental arch and in half external rotation on its axis. On the left, the lateral incisor, the canine and two temporary molars are completely destroyed by caries of the third degree. On the right, the lateral incisor, the canine, and the bicuspid reduced to the crown; two large molars, one temporary and one permanent in the process of eruption. All the teeth have a greenish yellow discoloration due to the deposit which covers them about the neck.

The articulation is defective. The teeth of the lower jaw do not meet those of the upper jaw. They are separated nearly a centimeter; the child's tongue is held continually between the dental arches. The gums are rosy and very deep. The saliva is neither viscid nor liquid. The palatine arch is broad and very flat. The rugæ are well marked.

The second dentition, as is seen, is very slow. At ten years, eruption of the two large permanent molars of the upper jaw, one on the right, the other on the left. At eleven years, eruption of the two mesial incisors of the lower jaw, which were evolving at the time of the examination. The beginning of an eruption of a large permanent molar below and on the right.

The general sensibility appears normal. Wa—cries whenever she

strikes herself. She is rather ticklish and very sensitive to cold. The eyesight is good; her mother says that she distinguishes several colors. The hearing is normal: nevertheless, the child professes not to hear the tick of a watch when held to her ear (?). The smell is a little blunt: assafoetida does not cause her to make a very well defined grimace. The taste should be normal; the child likes salty things. Respiration and circulation do not offer anything in particular. Pulse, light, regular at 72.

Digestion—Wa—eats alone; uses a fork and even a knife; far from being voracious; she has a moderate appetite. Her favorite food is soup, bread, and fried potatoes (she prefers boughten ones to those which her mother prepares). She eats almost no meat; she does not like milk, sugar, or cakes. Wine gives her pleasure, but she drinks little. She never vomits; her bowels move daily. She has never been troubled by worms or piles. Her mastication is all right.

August 20th, 1888. The general condition is the same. The scalp is continuously affected by an eczematous eruption. The nose is even flatter. The eyelids, the cheeks, the sub-clavicular lipomatous masses are larger. The breasts are not developed; the labia majora are perhaps more prominent. The voice is harsh and hoarse; the speech, according to the mother of the child, is rather well developed. There has been, perhaps, some improvement within a year, in this respect. W—is obstinate. When any one comes in she refuses to talk. At the nursery where she goes, she remains immovable in her chair; she does not like to play with the other children, who, besides, make fun of her and complain of her for smelling bad (ozæna).

W— dresses herself alone; knows how to lace and to tie the strings of her shoes, and to crochet. She has a very emphatic sense of modesty. We have much trouble in disrobing her for the purpose of examination. At home she takes endless precautions in changing her chemise, even before her sister. The anterior fontanelle persists in length 15mm and in breadth 4 to 5 cm.

May 10th, 1889. *Height*, 835 cm; *weight*, 14.800 kilogrammes. As one can see, she has grown only one centimeter in two years. Her weight has increased 1.500 kilogrammes. The child had the mumps about a month ago. The hair is long, coarse, stiff, very dry; black behind and chestnut red in front. It is very thick almost everywhere except above the two sides of the forehead where it is thin. Of late, the hair has fallen out from areas of one or two centimetres; it grows out again very rapidly. The *anterior fontanelle* persists, also the eczematous eruption. The forehead measures three centimetres. The eyelids are swollen and bluish. The lashes of the lower lids are long, often shed and reproduced. The ciliary blepharitis is not diminished. The nasal discharge has not stopped but exhales a less disagreeable odor, although from lack of means the mother has not been able to give regular antiseptic injections. The tongue is very thick and prominent; there is no driveling. The ears are pale and a little swollen. The lipomatous masses of the cheeks and of the sub-clavicular hollow are

not diminished. There is no change in the appetite, the nourishment, or the digestion. The appearance of the abdomen and the size of the umbilical hernia (circumference at the base 5 cm; projection 15 mm) have not changed. There are no breasts. The labia majora are not enlarged. The *mons veneris* is without down, also, the armpits and the whole skin. No perspiration.

W—goes on small errands, one at a time; she speaks rather well and makes little phrases, says the mother. Her voice is still shrill, harsh, and a little nasal. She sleeps well and long. Her sensibility to cold is still rather pronounced. There is the same repugnance to all movement.

August 14. The patient, as the members of the section can themselves prove, presents continually the same symptoms. Here are the dimensions of the head and the limbs taken in 1887 and 1889.

HEAD

	1887	1889
	cm.	cm.
Maximum horizontal circumference	50.2	52.5
Bi-auricular semi-circumference	30.5	31.5
Distance from root of nose to occipital protuberance	35.5	36
Maximum antero-posterior diameter	13.3	13.7
Bi-auricular diameter	10	10.5
Bi-parietal "	17.2	18.3

UPPER AND LOWER LIMBS

Left arm at armpit	15	16
Right arm at armpit	15	16
Left arm at 5 cm above olecranon	14	15.5
Right " " "	14	15.5
Right fore-arm at 5 cm below olecranon	15	16
Left " " "	15	15
Left fold of the wrist	10	11.5
Right " "	10.5	11.5
Left metacarpus	11.5	15
Right "	12	15
Left thigh at the groin	25.5	28
Right " " "	25.5	27
Left thigh at 5 cm above the patella	22	24.5
Right " " "	22	22
Left leg at 5 cm below patella	20	21.5
Right " "	20	21
Left leg below the calf	13	14
Right "	13	15
Instep (middle part)	15	11.5

In order to make clear the etiology we must insist upon the salient points. First of all, we shall mention, in the case of the father, the existence of a persistent intermittent fever, which is also in the case of the patients, subjects of Cases V and VIII. It is proper to notice the numerous hereditary antecedents. Several relatives were apoplectics, paralytics, lunatics, or epileptics; others were subject to drunkenness.

(To be continued in next number.)

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ASSOCIATION OF MEDICAL OFFICERS OF AMERICAN INSTITUTIONS FOR IDIOTIC AND FEEBLE-MINDED PERSONS.

FIRST SESSION.

THURSDAY MORNING, MAY 16, 1901.

The twenty-fifth annual session of this Association was held in Baltimore, Md., May 16 and 17, 1901. The session was called to order at 9 A. M. in the Carrollton Hotel by the Vice-president, Dr. F. W. Keating.

On motion of Mr. Alexander Johnson, Mr. A. R. T. Wylie was elected secretary, *pro tem*, in the absence of Dr. Rogers, Secretary.

In answer to the roll-call the following persons responded:—

Dr. Geo. H. and Mrs. Knight, Mr. and Mrs. Alex. Johnson, Mrs. Mary Harper, Mrs. Johnson, Dr. F. W. Keating; Mr. Stonaker, of Denver; Miss M. Gundry, Dr. J. M. Murdoch, Miss Jackson, of

Baltimore.

On motion it was voted to dispense with the reading of the minutes of the last meeting.

Letters from Dr. Rogers and Dr. Carson regretting their inability to be present were read.

Dr. Keating invited the Association to hold one session at his Institution at Owings Mills.

On motion of Mr. Johnson the invitation was accepted.

An invitation to visit the penitentiary was read and accepted.

It was decided to postpone the appointment of the committees on resolutions, time, place and organization, till more members should be present. Dr. Murdoch was asked to report for the committee on the program.

DISCUSSION.

Dr. Murdoch: Early in the winter we solicited papers from various members of the Association but with the result that only a meagre program could be printed.

On motion it was voted that the program provided for the evening of the 16th should be made the order of the day for the 17th. Without any formal paper or address the remainder of the evening was devoted to an informal discussion of the advantages or disadvantages of caring for the feeble-minded and the epileptic in the same institution, of which the following is an abstract.

Mr. Johnson: What is the proportion of epileptics in the Maryland Institution for the feeble-minded?

Dr. Keating: Over twenty-five per cent of our applicants are epileptics.

Mr. Johnson: That is about the per cent of our institution.

Dr. Murdoch: We have twenty per cent. It is our opinion that it is better to have them scattered among a large number of feeble-minded rather than to have them in one department, for unless you have four or five hundred you can not have proper classification without great expense. In a large institution you can separate the different grades among the epileptic.

Mr. Johnson: We have got ours pretty well separated. We have thirteen grades of girls and eleven of boys. Some of the lower grades are with the feeble-minded.

Dr. Murdoch: There is a certain grade on whom the association has no effect and then I see no objection to putting them together. There is a class of high grade children who are rather sensitive to their association and they should not be associated with low grades whether epileptic or not.

Dr. Knight: Where is the harm in putting a high grade epileptic with a feeble-minded child of the same mental ability?

Dr. Murdoch: We have found no harm in it.

Dr. Knight: I haven't either.

Mr. Johnson: Neither have I.

Mrs. Knight: Do you not think that by having the two together you can get better care-takers than through the low paid service that you would otherwise probably have?

Dr. Murdoch: Yes.

Dr. Knight: Is it not true that an epileptic child placed with no epileptics has a less number of seizures than if in a group of epileptics?

Dr. Murdoch: I could not say.

Mr. Johnson: I do not think it makes much difference. We divided our brightest girls into two divisions, epileptic and non-epileptic, and there has been no difference in the spasms yet.

I shall know in a year whether it makes any difference.

Dr. Knight: Are they under any kind of treatment?

Mr. Johnson: They are under more or less treatment. I do not believe we have an epileptic that is not taking bromide.

Dr. Murdoch: Having them together might facilitate routine treatment, particularly if they were at separate tables.

Mr. Johnson: That is the point, the dietary.

Mrs. Johnson: For the highest grade we do not have to make any change in the dietary. They eat the same as the others except during the seizures.

Dr. Keating: I do not see how a state institution that receives feeble-minded children can exclude them if they are epileptic.

Dr. Knight: It can not, unless they are provided for in another institution.

Dr. Keating: If a child is imbecile and epileptic I see no objection to receiving it, but if it is normally intelligent and is an epileptic I think we should not receive it.

Mr. Johnson: The Indiana law reads that we shall receive all but paralytics.

Dr. Keating: Our law says that we shall have two departments:—

One is for feeble-minded, and when sufficient funds are obtained there will be a department for epileptics. We have a small cottage building, built by a former president of the board of trustees, which holds twenty boys.

Mr. Wylie was asked to speak on this point.

Mr. Wylie: I think the idea in Minnesota is to separate them. We have four cottages for epileptics now. I believe they are going to acquire more land and arrange the colony something after the Craig plan, putting the boys on one side of the river and the girls on the other.

Q. Is the idea to make that the germ of another institution?

Mr. Wylie: I think that may be the idea. The new law has made several changes. The Feeble-Minded will be under the Board of Control.

Dr. Murdoch: It seems to me there is no objection to separate institutions, provided the state has enough to establish thoroughly good ones with competent management and oversight. Unless it can do

that, it would be better to have both classes under the same management. I would not establish such an institution unless I expected it to contain five or six hundred inmates.

Mr. Johnson: There is not a state in the union where you would not soon get up to five or six hundred. If we could get thoroughly organized institutions for the feeble-minded and for epileptics in thirty or forty years it would not be necessary to increase them whatever the increase in population. In preparing for epileptics it is well to remember one thing in getting the dormitories ready, that hair pillows are the best. It would be almost impossible to smother in a hair pillow during a spasm and we know that it would be possible with feathers.

Dr. Murdoch: A number of epileptics have been smothered in feather pillows. The mucous escaping from the mouth glues the lips to the pillow.

Mr. Johnson: When we began using hair pillows for the epileptics, the girls would steal the pillows from the other beds, so we had to take away all the feather pillows. There was some grumbling at first, but I think a hair pillow is much more sanitary than a feather one.

Dr. Murdoch: It is better also to have very low beds for epileptics.

Dr. Keating: I have had several badly hurt by falling from beds.

Mr. Johnson: We have a bed with a side rail. There are few accidents. We have had two cases that fell so often forward that they had to wear padded caps.

Dr. Murdoch: We have a good many who fall backwards and it is a pretty severe fall when they strike on tiled floors. We also use padded caps.

Q: Have they a prescribed diet at the Craig Colony?

Dr. Keating: Dr. Spratling thinks the diet should be regulated carefully.

Dr. Murdoch: They have a great many attendants in the dining-room who give certain portions to each individual.

Mrs. Knight: It is said that at Gallipolis they serve dinner in courses of small portions, with attendants to see that they eat properly. I should think that would be rather difficult to carry out.

A: They have a great many attendants.

Mr. Johnson: We cut all the meat fine for our epileptic patients. We do not give as much meat to low grade epileptics as to the others, and the meat we do give is minced fine with sausage cutters, after being properly boiled. They get meat once a day, and we use a great deal of milk.

Dr. Murdoch: Giving too much cereal food is apt to lead to fermentation. In that case you get benefit by lessening the quantity and giving milk and egg diet. I do not think meat itself is harmful to epileptics, except that when they have it they are more likely to overeat.

Mr. Johnson: The trouble is they do not masticate it. They swallow great big pieces. If the meat is well cooked and minced up fine it does not produce the spasms that it otherwise does.

Mrs. Knight: What will Maryland do with her epileptics?

Dr. Keating: The head of the Lunacy Commission thinks there should be a separate institution in a different place.

Mrs. Knight: He believes in small institutions then?

Dr. Keating: I do not know.

Mrs. Knight: Is there money enough to do that easily?

Dr. Keating: I suppose there is money enough if the legislature would give it. If it were given to state instead of to private institutions there would be abundance of money. It is a question which it would be most advisable to do. In the first place the charter did not provide for epileptics. It was amended to do so, but the state never made any special provision, except that it gave the board of directors power to receive them, but it did not give any appropriation for them. We have only taken a few that a private individual has provided for.

Miss M. Gundry: The state provides for but one institution. The insane asylums are only partly supported by state appropriations.

Mrs. Knight: Do you have more applications for epileptic than for feeble-minded children?

Dr. Keating: They are more persistent. We have a long waiting list of which twenty-five per cent are epileptics.

Mrs. Knight: I think there ought to be a committee to educate legislatures and boards of trustees! If any one is willing to take charge of feeble-minded children and epileptics and to properly care for them they ought to be helped to do it. Legislators seem to think that people are falling over each other in the effort to do this work. They ought to learn just how difficult it is.

Dr. Keating: We went so far as to take a lot of children down to the House of Delegates at Annapolis. We went further and invited the members of the legislature to the institution and forty of them came.

Mrs. Knight: But it is the pride of superintendents and their wives to put the best foot forward. If the legislators should see the very worst set, such as you talk about in conferences, the set that is under your eyes every minute from morning till night and again until morning, that would be the thing that would affect them. But you have a kind of a personal pride in keeping the worst cases out of sight and showing only the brightest, so that they do not appreciate the terrible need there is of such care.

Mr. Johnson: When we show the general public the institution we do that, but we tell them we have lower cases. We show the low grades to the legislators. We have found it a good plan to show the school children in school and then to bring in squads of the low grades, those who are only capable of the physical training. Then we show the work of those who are self-supporting. That leaves a good effect on the legislators.

Mrs. Knight: How would it do to begin with the highest and

leave off with the lowest? When I was sharing in the work in Minnesota I was just as eager to show off the best side as you are.

Dr. Murdoch: We made that mistake in our Institution at first.

Adjourned at 10:15 p. m.

SECOND SESSION.

FRIDAY MORNING, MAY 17, 1901.

The session was called to order by the President, Dr. Polglase, who appointed the following committee:—

Committee on time, place and organization: Dr. George H. Knight, Mr. Alex. Johnson and Mr. A. R. T. Wylie.

The treasurer's report was received and was referred to an auditing committee consisting of Dr. Murdoch and Miss Gundry.

Mr. Johnson invited the Association in the name of the trustees of the School for Feeble-Minded at Fort Wayne, and in his own name to hold the next annual meeting in Ft. Wayne in 1902. The invitation was for any time during the summer, but preferably in the month of June.

Dr. Polglase said he thought the meetings held at Institutions had been the most successful. He then read the President's address after which the Association adjourned to Owings Mills.

* * *

THIRD SESSION.

FRIDAY AFTERNOON, MAY 17, 1901.

The Association was called to order after dinner, and a visit through the Institution at 5:30 o'clock. Dr. Murdoch reported for the auditing committee that the accounts had been examined and found correct. The report was accepted and adopted.

The committee on time, place and organization reported, and recommended that the invitation to Ft. Wayne should be accepted for June, 1902, and the following names were presented for officers for the ensuing year:

President, Dr. F. W. Keating; Vice-president, Dr. J. M. Murdoch; Secretary, Dr. A. C. Rogers; Committee on Program; E. R. Johnstone; Editorial Committee to hold over.

The report was accepted and adopted and the persons named were declared elected.

The following persons were elected to active membership, Mrs. Lucy Sickles, Michigan.

To adhering membership, Mrs. W. B. Williams, Lapeer, Mich.; Mr. A. W. Butler, Indiana.

An address on the "Causes of Idiocy" was given by Dr. Hurbert Richardson, of Mount Hope Retreat, Maryland.

*The "President's Address" was published in the June, 1901, number.

THE CAUSES OF IDIOCY.

BY DR. HUBERT RICHARDSON, PATHOLOGIST, MOUNT HOPE

RETREAT, MARYLAND.

I have little or no personal acquaintance with the idiotic or feeble-minded and the few that I have studied most have been generally a type not such as we can make much experimental procedure with; but the causes that bring that unfortunate condition to bear in the child I do not think have received sufficient study in the past.

There are a number of cases of cretinism which have been remedied by the use of thyroid. There is almost absolute absence of the thyroid in cretinism. The thyroid treatment is also used in cases of insanity. Sometimes where there are minor symptoms difficult to detect we get brilliant results from thyroid. Many apparently hopeless cases of insanity can be cured by thyroid feeding. Hertogh, of Brussels, has made this a matter of special study. He has taken children, low-grade idiots, whom he suspected by a number of symptoms to have an absence of the development of the thyroid gland and by treating them carefully with thyroid he has caused marked improvement. He divided them into two classes, one short in stature, stout, with bad teeth, sparse hair and who give the appearance of being young for their years. The others are tall for their age and thin. There is no very marked defect till they get to the age of puberty and then it is noticed that these children are backward. Parents will tell you that the child is backward, that his mental capacity has not increased as the other children's increases. The child hardly goes into the class that would get into an institution, but he is incapable of education. He is difficult to teach, irritable and often becomes a criminal degenerate, one of those degenerates of whom perhaps we hear more than we see. Many of these children might be made practically normal and able to go out into the world and earn their own living, even if they had to take thyroid feeding the rest of their lives.

The question comes up, if the thyroid gland is so important why may there not be other glands which are not properly developed, causing trouble?

There may be excess of thyroid. Then you have a trembling, idleness, want of attention, sudden displays of passion. The child is nervous, has tremor, want of stability, sudden outbreaks of temper and actual mania sometimes. These cases have excessive thyroid. If they live long enough, owing to the hyperactivity of the gland and the changes that take place, they may become myxœdematous.

There is another cause of feeble-mindedness, viz: in the circulation. It is quite evident that unless the brain has sufficient nourishment it can not develop. The type known as Mongolian is usually associated with foetal endocarditis, contraction of the pulmonary orifice. If the circulation can not reach the brain, it must follow that the brain is not properly nourished. As long as the child is in a recumbent position it

may get on very well, but when it takes a vertical position the circulation is prevented from going to the brain by the weakness of the heart. Many of these cases are associated with epilepsy. There is a contraction of the arterial system which must mean a want of nourishment to the brain. The arteries of the brain have no vaso-constrictor valves and the supply to the brain is regulated by the constriction of the other vessels of the body.

You may put down then as three causes of feeble-mindedness and idiocy, foetal heart disease, and in very early life absence of thyroid, and excessive thyroid secretion.

There is another gland which has to be considered, the supra-renal, the secretion of which has the effect of controlling the vaso-motor system. It acts in a way to increase the tonicity of the muscles and is of benefit in Rachitis.

Take the average child and you will find there is a want of tonicity in many cases. The flesh is flabby, the blood pressure is low, the blood is not up to standard, and the heart fails to do the necessary pumping. The whole matter of driving the blood to the brain depends on the contraction of the vaso-motor system. Every emotion, every physical exertion, rests on the blood pressure. You can with proper instruments, find the difference in blood pressure as the result of outward stimulus. Sometimes certain nerves fail to react and then you have sluggishness of circulation and the necessary result in the development of the brain. You find that in the case of the insane if you can stimulate the circulation, the mental power is sometimes increased without anything more. I have been struck as I have looked through the literature of the subject with the fact that so far as feeble-mindedness and idiocy are concerned, almost nothing has been done from the physical or medical standpoint to cure them. If we take the little mentality they have and work that, it helps in bringing nutrition to the brain. If they were carefully analyzed as insane patients have been, the condition of blood pressure and the action of the heart learned as they might be with the devices science has given to investigate these conditions, I think the condition of many of them could be alleviated and many of them could be made self-supporting either in the institution or outside.

Dr. Keating: Last year we had a few studies in that direction taken up by various members. The absence of the capsule of the kidney has interested us and the use of the extract is having a field, though it is new to most of us.

Dr. Murdoch: I have been interested in the relation of the thyroid to idiocy. We have but two suitable cases in our institution and they are both too advanced in years. One is twenty-eight and one thirty. Under continuous thyroid treatment they are much more active and their general condition is much better. They lose the flabbiness of skin to a great extent. They show that they are in better health, but that is

all. The subject of the supra-renal capsule is one that I have not paid a great deal of attention to till within the last two years. We have yet to find any abnormality in that respect. Those of us who have post-mortem examinations must have paid special attention to this and of course we must all have observed in regard to the circulation, that without exception almost, they have poor circulation, coldness of extremities and livid and blue lips. Post-mortem examinations without exception show the heart undersized, flabby, with thin walls and with the arteries smaller in calibre.

Dr. Hill: My observations of the appearance of the feeble-minded from a scientific standpoint are rather limited. My connection with them is more executive than scientific, but I have been interested in the scientific part of it, and from my connection with the insane I believe the conditions are not very dissimilar. It would seem there is a physical cause for almost everything. That brings us in the direction of materialism.

Dr. MacDonald in his measurement of thirty or forty thousand children shows that almost every class is represented by some special physical development. He goes so far as to point out that the truant boy is generally a truant owing to some defect in his character which he owes to his physical defects.

Dr. Richardson's remarks with reference to glandular treatment were interesting to me. So little has been done along that line. The first discoveries were almost by accident, coming from the observation of the effects of the gland. Then came the observation of other glands. Thus they multiply. I have already read the suggestion from some thinker that there may be a gland in the body to correct almost any trouble that may occur. We may come to rely on nature's remedies without going into the mineral and vegetable worlds.

The use of thyroids is not absolutely limited to the indications for thyroid feeding, not only to those who show evidence of myxœdema, but type Lorraine. We make use of thyroid in other cases. Post-mortems are exceedingly interesting for they reveal what has taken place in the body, but they do not give us an actual guide for treatment during life, but there are means by which we can avail ourselves of ante-mortem examinations. We may get some insight into the individual before he is dead. There are secretions, the blood, the stomach, etc., that we can reach. Aside from the study of the blood there can be the study of the behavior of these secretions, quantity as well as quality, the amount of pressure of the blood, etc. Thyroid has the tendency to dilate the capillaries. The child with congested extremities, with hands that are blue, needs to have the circulation improved and if that can be accomplished there is temporary and sometimes permanent relief.

Mr. Johnson: We have had two autopsies where the supra-renals were much enlarged. The others did not present any abnormalities. It is interesting to observe that the effect of physical exercise is a very

great quickening of mental power in the imbecile child. Take thoroughly organized physical culture and it is noticeable how the mind reacts from the stimulus of the physical condition.

As to pathological investigations, suppose we make all the autopsies possible, directing special attention to the glands, sending them to Dr. Wilmarth, with a careful description of the child and ask him to collate that information. We might find something useful to science. We have worked each one too much alone. We have five or six autopsies a year only, and the consequence is that the result is not very much. If we united in our work we might get something good out of it.

Mr. Johnstone: In using thyroid in case of poor circulation is the use of it to be continued to keep the circulation up? We have used it only a short time in cretinism, but we have seen very good results in using it in other cases.

Dr. Hill: It has to be used constantly if there is defect in the thyroid. I do not know of any instance where subsequent growth has taken place and it has assumed its function.

Dr. Richardson: You can tell whether the supra-renal was secreting by taking a slice of the fresh gland and with ten per cent of ferro chloride it will turn blue and you can see whether it was secreting normally at the time of death. It is usual to say that all these causes are due to heredity. I do not think so. Like produces like, but another principle which is now generally admitted is that acquired characteristics are not transmitted. What really causes the defect in the child, whether epileptic or feeble-minded, is probably more from prenatal influences than from heredity. There may be biological changes which can be transmitted, but nature usually provides for that by the want of power of propagation. Idiot women have had children, however, that were perfectly normal.

Dr. Polglase said that at Dr. Rogers' institution in Minnesota an eminent pathologist was at work from whose research much was expected. Another branch of work carried on there was the study of psychology. He introduced Mr. A. R. T. Wylie, who read a paper, (a report of a committee appointed in 1900,) on "A Scheme for Psychological Investigation of the Feeble-minded."

REPORT OF COMMITTEE ON PSYCHOLOGICAL RESEARCH.

Pursuant to the instructions found in the Minutes of the last meeting the committee would submit the following blank. While more extended than was there intimated, we however thought it desirable to have it as complete as possible, feeling that in any case each one using it would adapt it to his own needs or limit it to what he considered of most importance. Consequently we submit the blank as a tentative outline for the collection of facts, knowing that it could be well improved in many particulars. It is not intended to supplant any blanks already in use in our institutions. In grouping the items we tried to

arrange them in as scientific a manner as possible, but it was found necessary in some instances to yield to convenience.

PSYCHOLOGICAL EXAMINATION.

Application No.....Name.....Psychological No.....

Date.....Type.....

ANTHROPOLOGICAL:

Age.....Height.....Sit. Height.....Weight.....
Lung Capacity.....Circulation.....

HEAD MEASUREMENTS:

Cir.....Naso-Occip. Arc.....Binauric Arc.....
Trans. Diam.....Long. Diam.....Height.....Cephalic Index.....
Smith's Module.....Dist. External Edges Orbits.....

HEREDITARY CONDITIONS:

.....
.....

STIGMATA OF DEGENERACY:

.....
.....

SENSATION:

Touch.....
Pain.....
Hearing.....
Vision.....
Taste.....
Smell.....
Muscle.....
General.....

PERVERSIONS:

Photisms.....Nystagmus.....Abnormal Sensations.....
Color Blindness.....

PERCEPTION:

Form.....Color.....Are Names Present?.....Illusions.....
Hallucinations.....Test.....

MEMORY:

Parents.....Home.....School.....Daily Life.....

TESTS:

Visual:—Form.....Color.....Letters.....Auditory, Syllables.....
Words.....Sentences.....
Muscular.....

PERVERSIONS:

Amnesia:—Temporary.....Periodic.....Progressive.....
Partial.....Hypermnesia.....Paramnesia.....

EMOTION:

General Tone of Feeling:—Apathetic.....Euphoria.....Malaise.....
 Mobile.....Obstinate.....Excitable.....Irritable.....
 Like Stimulation.....

INSTINCTS:

I. NUTRITION:

Suck.....Bite.....Clasp.....Carry to Mouth.....
 Gormandize.....Disgust.....Cleanliness.....

II. RELATION:

(a) Bodily Movements, Sit up.....Hold up Head.....Walk.....
 Age.....Character of.....Climb.....Vocalize.....
 Habit.....Right or Left Handed.....
 [b] Pain.....Cry.....Grief.....Auto mutilation.....
 [c] Pleasure.....Joy.....

III. CONSERVATION:

[a] Fear.....Object.....Expression.....Danger.....
 Phobias.....Cowardice.....
 [b] Anger.....Object.....Expression.....
 [c] Affection.....Sympathy.....Sociability.....Smile.....
 Civil.....Justice.....Unselfish.....Secretiveness.....
 Religious.....Moral.....
 [d] Play.....Games.....Laugh.....Beauty.....
 Imitation.....
 (e) Curiosity.....Doubt.....Surprise.....
 (f) Self-feeling—Pride.....Humility.....Self-esteem.....
 Ambition.....Desire for Power.....Suicide.....Shame.....
 Blush.....Remorse.....Acquisitiveness.....
 Constructiveness.....Destructiveness.....Stealing.....
 Meanness.....Cruelty.....
 (g) Love.....Sexual.....Masturbation.....

VOLITION:

Dress.....Wash.....Use Knife and Fork.....Work.....
 Can Do.....Talk.....Age.....Articulation.....
 Rhythmic Motions.....

GRIP:

Right.....Left.....

VOLUNTARY MOTOR ABILITY:

Taps.....Fatigue.....

STEADINESS:

Right Hand.....Left Hand.....

WORK:

Right.....Left.....

Reaction times.....

PATHOLOGICAL:

Strong Will.....Obstructed.....Explosive.....Automatic on
 Command or Imitation.....Lazy.....Kleptomania.....
 Insane Impulses.....

ASSOCIATION OF IDEAS:

Slow.....Rapid.....Confused.....Monotonous.....

Imperative.....Test From Associated Words.....

ATTENTION:

Involuntary—Aroused by what stimuli?.....Does he live in world of own?.....
 Desire for change.....Voluntary—Read and remember what is read.....
 Distraction.....

JUDGMENT:

Estimate of Probabilities.....Abstract Ideas, Time.....Number.....
 Lie.....

REASONING:

Deductive
 Inductive.....

IMAGINATION:

Type.....Distinguished—Imaginary and Real.....Delusions.....

SPECIAL TALENTS:

Music.....
 Mechanical
 Memory of places and dates.....

SCHOOL RECORD:

Reading

 Writing.....

 Numbers

 Mechanical.....

Smith's Module is recommended by Herdlicka when the cranial capacity is wanting and is found by taking the sum of the transverse and longitudinal diameters and the height and dividing by three.

The hereditary conditions are taken from the application blanks or other sources showing whether first or second born, ages of father and mother, neurotic conditions, etc.

Touch can best be tested by using weights similar to Scripture's Touch Weights. These applied on the backs of the hands would give the threshold of touch.

The pain sense can be tested by using Cattell's Algometer on the hands and forehead, or McDonald's Algometer over the temporal muscle.

Hearing.—The common test with the watch or tuning fork is probably all that can be done here.

Sight.—Test by Snellen's Test Chart, also measure visual fields.

Taste.—Find the strength of solution that they can taste by mixing standard solutions with water. Strength of standard solutions suggested, sugar five per cent; salt ten per cent; tartaric acid five per cent; quinine one tenth per cent.

Smell.—Find the presence of smell by means of proper solutions and possibly in case of the brighter children measure with the olfactometer.

Muscle.—Find the smallest perceptible difference by lifting test weights.

General.—Determine the presence of hunger and thirst.

Memory.—Test by displaying five colors, forms and letters for the space of two seconds and then requiring the child to select the same from a similar set before him. Give the auditory tests by reading the syllables, associated words, and sentences at the rate of one word per second, requiring an immediate reproduction on the part of the child. Record in all instances the number of successful trials. Test muscular memory by requiring the child to reproduce certain length arm movements as 100mm., 300mm., and 500mm., both immediately and after an interval of ten or twenty seconds. Record the length reproduced.

The group of instincts includes certain other items which are placed here for convenience. In making the record here it would be well not only to record the presence or absence but also their increased or decreased prominence. This could be easily done by a system of signs as +, —, ×, o, indicating that they were of increased, decreased, or of normal importance, or were absent.

Voluntary motor ability is tested by requiring the child to tap as rapidly as possible for forty-five seconds and noting the number of taps during the first and last five seconds. The number of taps made in the first five seconds would show the motor ability, and the per cent. of loss in the last five would show the fatigue.

Steadiness is best tested by Scripture's Steadiness Apparatus using both right and left hands.

Work is tested by the ergograph, noting the form and height of the curve and the amount of work done in kilogram meters.

The reaction times might be omitted using instead the voluntary motor ability.

All the other items are self-explanatory.

It might be well to call attention to and emphasize the importance of the group called instincts. It is by defect and delay in their appearance that one is earliest led to suspect idiocy. And it is here also that moral imbecility would be shown on the blank. But their chief importance perhaps lies in the fact that they compose the mental capital upon which the teacher has to work, and from a pedagogical standpoint a detailed study of the instinctive life of individual cases is of the highest importance. And as the higher mental powers are chiefly wanting in the feeble-minded, instincts sum up the greater part of their mental life. So a full and complete study of the instincts of the feeble-minded is therefore particularly desirable. And it seems evident that it is here that the greatest advances are to be made and the greatest successes attained in psycho-pathology.

On motion the report prepared by Mr. Wylie was adopted and it was voted that it be printed in the JOURNAL OF PSYCHO-ASTHENICS and that it be distributed among the different institutions.

A brief paper on *"Craniectomy for Arrested Development, With After-History of Three Cases" was read by Dr. J. Moorhead Murdoch. Adjourned at 7.30 P. M.

* * *

LAST SESSION.

FRIDAY NIGHT, MAY 17, 1901.

The last session of the Association was held Friday night. The Association was called to order in the Carrollton Hotel, at 9.45 p. m. after the return from Owings Mills. Attention was called to the work of Arthur MacDonald and his study of defective cases. On motion the following resolution was adopted:—

That a special committee be appointed to look into the work which Dr. MacDonald is doing, and report upon it at the next annual meeting.

Mr. Alex. Johnson, Dr. Keating and Dr. Polglase were appointed such a committee.

On motion, a hearty vote of thanks was passed in recognition of the courtesy and hospitality of the Maryland Training School, and of appreciation of what that school is doing; to Dr. F. W. Keating and to his board of trustees.

A report of *"A Case of Special Mental Precocity with Early Degeneration," by Dr. A. C. Rogers, was presented.

* * *

Dr. Polglase: I saw the boy last winter to whom Dr. Rogers refers. I placed it as a form of mania.

Dr. Keating: I have a case precisely similar. He has to try five or six times before he can go through a door. With this boy it is a form of melancholia. Up to fourteen he was very bright and led his class in school. He became very dirty in his habits and played tricks on smaller boys and they had to send him to the insane asylum. Since then he has had different bad attacks of mania.

Adjourned *sine die* at 10:30 P.M.

*Published in the June, 1901, number.

*To be published in December, 1901, number.

SELECTED ARTICLES

SYSTEMATIC EXERCISE FOR THE TREATMENT OF THE FEEBLE-MINDED.

In taking up the subject of the development of children who are below par mentally, there is no question but that the physical condition of the child has been deemed of too little importance, and his physical development has been more or less neglected until recent years by his caretakers. In the use of the term "feeble-minded" the writer means to include not merely persons who are regarded as imbeciles, but also children who are lacking in some great sense, such as "eye-sight" or "ear-sight." He was struck some years ago, on visiting a large institution for the blind, how deplorable the physical condition of the children seemed to be and on inquiry he found that as yet but little was being done for them in these institutions along this line. In this case it was not due to the lack of thought or ability of the physicians visiting the institution or of the instructors in charge, but to the prejudice of the managers, who regarded the introduction of a gymnasium and systematized exercise for the blind as a "fad." Of course, in the blind many of the causes which produce this condition produce also ill health, in many cases; the mere fact of being blind, of being unable to work to the fullest extent, or play to the fullest extent, has a depressing influence upon the physical condition, and therefore probably in all institutions for the blind the physical condition of the students is very far below the average.

This has been recognized on all sides now by managers of these institutions and the results already obtained warrant the further extension of gymnastic methods among this class of people.

In the feeble-minded themselves there is no doubt that the use of specially directed gymnastic exercises will help this class of patients. Imbeciles can be made, without much effort, to imitate proper calisthenic movements without trouble, and the results will appear speedily. Drs. Taylor and Pearce have pointed out recently that organic vascular heart disease is a very large etiological factor in the production of imbecility, and they believe that many of the higher grade cases can be bettered by attention being paid to therapeutics of the cardio-vascular disorders of imbeciles. The use of carefully watched exercises could be included in these measures, and there is no doubt but that much can be done in the future for these unfortunate cases which the laity and the majority of physicians at present are willing should remain as they are.

—*Mind and Body.*

DEFICIENT HEARING POWER.

In Germany and America large numbers of children have been examined recently to ascertain with what frequency deficient hearing present. The results obtained in both countries are remarkably uniform, showing from twenty-two to thirty per cent of children with marked deficiency of hearing. Dr. Permewan, of Liverpool, began an examination of the children of the Board schools of his own city for the same purpose. His attention was called to some very interesting, if not startling, facts regarding the results of dullness of hearing upon the mental and moral development of children thus afflicted. Of twenty children denominated as *bad* by their teachers only six had the normal amount of hearing power. Of those denominated as *good* every one had good and useful ears. He also found that the average hearing power of a large class of *backward* pupils was but about half that of another class of *fair* scholars, the difference between the *fair* and *bright* pupils being about the same. This was determined by testing the distance at which the ticking of a watch could be heard. These were the neglected children of the poor. Among children receiving better care the difference was not so great.

Deafness, because it is not detected so readily as most other defects, often passes unobserved, even though sufficient to hamper seriously the child. This is the more unfortunate, since a child, well disposed and attentive, honestly trying to do his best at school and elsewhere, because he cannot hear, is reproved for inattention and is considered stupid. Finding that he falls short of what is required of him and of what his mates accomplish, he finally accepts the common belief and ceases to put forth effort toward improvement, becoming in a double sense a hopeless case. The effect on his moral nature is still more marked and disastrous. Suffering under the smart of injustice, he is too liable to become sullen and surly, the faults for which he was in the first place reproved.

The physician who has among his patients such a child might do it unmeasured service by discovering its defect and warning both parent and teacher, thus saving the child suffering from embarrassment and chagrin, and preventing more serious and lasting physical and mental injury.—*Archives of Pediatrics*.

Governor Odell has signed the state charities bill, which provides, in Illinois, for a fiscal governor to be appointed by the governor at a salary of \$6,000 per year to supervise expenditures by state charitable institutions; and for a state board composed of the governor, the state comptroller and the state board of charities to pass on all plans for additions and improvements to the institutions.

—*The Charitable Observer*.

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ORIGINAL ARTICLE.

IDIOCY WITH PACHYDERMICAL CACHEXIA

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CASE V.

FATHER intelligent, offers a slight microcephalus; transitory intermittent fever.—Paternal grandmother died from cancer of uterus.—Paternal grandfather operated upon for stone in the bladder.—Paternal great-grandfather died of the gout.—Paternal great-grandmother died insane.—Mother nervous.—Maternal grandmother died of phthisis as also eight granduncles on the maternal side.

Confinement at ten months (?). Persistence of *anterior fontanelle* at five years of age.—Characteristic symptoms of myxœdematous idiocy.

Y—X—of B—, Spain, is aged 5 years. Father is 33 years old, a merchant, rather tall; enjoys good health, is very intelligent, although his skull is not fully developed, and his forehead is narrow and low. The face is very long; the nose, aquiline. He is more sanguine than nervous; no diathesis, no nervous accidents. Since he was 18 years of age he has had intermittent fevers lasting five days.

[Father, 70 years old, at one time operated upon by Ricord for stone in bladder. Nevertheless is well. Mother died from cancer of uterus. Paternal grandfather died from gout. Paternal grandmother died insane. No details concerning maternal grandfather. Maternal grandmother died at 80 years. Two brothers and two sisters, healthy, without nervous seizures, also their children. No lunatics, etc., in the family.]

Mother, 32 years old, lymphatic, energetic, no headaches, no convulsions; is not tall; is ordinarily in good health, although anæmic.

[Father tall, well built, lymphatic. Mother died of *phthisis*, as also eight brothers. Grandparents, no details. One sister in good health, no children. No lunatics, etc., in the family.]

No consanguinity. One year's difference in ages. Three children: 1st, our patient; 2nd, a boy 4 years old, healthy, intelligent, no

convulsions; 3rd, a girl three years old, in good health, without convulsive seizures. Both are entirely different from patient.

Our patient.—Gestation good, labor very hard, prolonged (3 days), "with an undoubted delay of one month," we are assured. At birth the child had much hair, and very long nails. During the first six months she resembled other children. From that time her movements began to diminish until they have resulted almost in an entire immovability of the limbs. The physiognomy, which expressed the vivacity and other characteristics common to children of this age, changed. She took on an air of imbecility, which she still has, although to a less degree.

For the first two years her head drooped in various directions, but at present she carries it tolerably well. During early childhood the head and tongue were developed out of proportion, but for the past two years they have not increased perceptibly in size. The upper part of the skull is flexible, like that of an infant of one year. The anterior fontanelle is not ossified for a space of 3 cm antero-posteriorly and 2 cm transversely.

The frontal region is flattened; the suture between the frontal bones is not ossified; it is even broad. A very pronounced slope from the vertex to the root of the nose is noted, and correspondingly a notable prominence of the posterior part of the skull. The hair is not very abundant and is short on the antero-medial portion. The scalp is the seat of small scales which are reproduced constantly. The countenance is without expression.

The eyelids, bloated, are the seat of a chronic ciliary blepharitis. The eyeballs are normal. The nose is short and stubbed. The cheeks are large; the mouth is large and the lips are thick and swollen. The tongue is voluminous and habitually protrudes. There is no drivelling.

The teeth as soon as erupted have decayed and fallen, so that for the most part there only remain roots. The first teeth must have erupted at about 20 months. The neck is thick and short. The trunk would be regular enough but for a little sinking in the vertebral column. The abdomen is very large, measures 56 cm at the umbilicus, which is the seat of a hernia of 3 cm long and from 1 to 2 cm long in diameter. It has been larger.

The different segments are large, thick set; the shin bones are incurved. The feet and hands are swollen, thick and short as well as the fingers and toes.

The child, in spite of the rather high temperature prevailing in that country, is sensitive to cold. She does not walk; she only stands and that without balancing herself.

The intelligence is not developed; nevertheless, Y—understands different things, recognizes all her relatives, and even shows a little affection for them. She does not bear contradiction; she easily flies into a passion, and then makes a great effort to throw herself on the ground.

The voice is hoarse, discordant; the speech is limited to "pa," for

papa, and to "Tetta", a word which indicates her governess.

Up to 18 months she was nourished by wet nurses; up to 4 years she was fed with condensed milk and yolks of eggs. Since then she has lived on goat's milk, eggs, brains of chickens and chopped meats.

She never has wished to drink water except during the course of a fever. The deglutition seems a little obstructed. Y—is not subject to vomiting. She is paralysed as to sphincter; has daily stools and never has had falling of the rectum.

As for ordinary diseases we have only to note some bronchitis, double otitis which disappeared in 8 days, and simple sore throat.

This observation was formulated from well-taken notes given us by her father, also from supplementary information which he gave upon coming to consult us. This child, as is easily proven by examining the figures nos. 4, 5 and 6, made from photographs, offers all the principal symptoms characterizing myxœdematous idiocy.

CASE VI.

Father died of tuberculosis.—Paternal grandfather drank to excess.—Paternal grandmother died of cancer of uterus.—Paternal uncle drank to excess.—Paternal aunt was subject to migraines.—Two second cousins idiots.—Mother subject to neuralgic pains, very nervous.—Maternal grandfather drank to excess.—Maternal grandmother hysterical.—Maternal great-grandfather drank to excess; died from an attack of paralysis.—Maternal great-uncle drank to excess.

Pregnancy bad; insuperable desire to sleep; a fall.—Asphyxiated at birth.—First convulsions at 14 months.—Coldness and cyanosis of lower parts of the body.—Fasting.—Loss of intelligence at beginning of 3rd year.—Complete type of pachydermical cachexia; typical physiognomy, hair reddish, persistence of anterior fontanelle; lipomatous swellings of the cheeks, of supra-clavicular hollows, of armpits; skin, waxy, eczematous; pachydermical condition of feet and hands; umbilical hernia; rachitis; absence of thyroid gland, etc.—Intense pulmonary congestion; death from syncope.

Autopsy:—Complete absence of thyroid gland.—Persistence of anterior fontanelle.—Gelatinous appearance of cerebral convolutions.

Bourg—Fernand August, born at Paris, July 1st, 1883; entered our service at Bicêtre, December 6th, 1887.

Information furnished by mother, December 16th, 1887. *Father*, 32 years old, has been employed in café since the age of 13; did not have convulsions during infancy; industrious, sober, of good conduct; subject to pains in the head, and dizziness; smokes very little, disposition mild, no indications of syphilis; no rheumatism, no skin diseases. He now is being treated at the hospital Lariboisière for tubercular bronchitis. (He died May 14th, 1888.) [*Father*, farmer, died from suffocation under a sack of flour or wheat while tipsy; he was given to alcoholic and venereal excesses.—*Mother* very nervous, sober, died

55 years old, probably from cancer of uterus.—No information of the grandparents.—One brother in good health but he drinks, which has led to separation between himself and wife.—Two sisters one of whom is subject to head-aches; their children have had no convulsions. Two first cousins, one aged 39 years, the other 22 years, have become total idiots in consequence of infantile convulsions. No lunatics, no epileptics, no myxœdema, no goitre, no deformities in the family.]

Mother, 24 years, dressmaker, healthy, brunette. regular features, not recalling in any way those of the patient. Sober, good conduct, no convulsions in infancy. She had neuralgic pains affecting the anterior part of the skull; twice she has had nervous crises following fright and opposition. Temperament very nervous, disposition changeable. [Father, wheel-wright, drank to excess, died in 1870, at 43 years of age from hemorrhagic small pox. Mother, 50 years old, dealer in second hand goods; sober, has had frequent nervous attacks up to age of 47 years.—Paternal grandparents, no details. Maternal grandfather died at the age of 65 of paralysis of right side after an illness of three days; he often drank to excess.—Maternal grandmother, 70 years old, sober, good health. No brothers. Two sisters enjoying good health and having had no nervous seizures.—Of two paternal uncles nothing in particular. One maternal uncle healthy, given to drink.—No lunatics, etc., in the family.]

No consanguinity. [Father, native of the department of Oise, mother from Romorantin; in this region exist goitres, but no cases in this family.]—Difference in ages of nine years.

Two children, and a pregnancy almost at term (that of the child Suzanne whose history we shall relate farther on).—1st, Fernand; 2nd, boy, 32 months; healthy, intelligent; walked at 10 months, was all right at 14 months; he talks fluently.

Our patient.—At the conception which took place a month after marriage both parents were well. Pregnancy rather bad; anorexia and vomiting; from the fourth week to the end of the sixth month mother was subject to irresistible inclinations to sleep. At the fifth month she had a fall which nearly caused miscarriage and compelled her to keep her bed for several weeks. "The child," said she, "had come down." No syncope, no œdema of the feet, etc. Delivery at term, natural, in twenty-six hours. At birth the child was black; they were obliged to rub it energetically. He cried only at the end of seven or eight minutes; the head was very large, deformed; the mid-wife kneaded it to give it a natural shape. Nursed by his mother to the eighth month, afterward on the bottle (cow's milk). His mother states that since the first month the child always has had the same appearance, that is to say: the complexion waxy, the cheeks and the lips thick, the hands and the feet swollen; and that he has had continually a scurvy scalp, dating from the fifth week; whereas the second child never had showed any of these characteristics. First tooth at 13th month. He probably was well up to 14 months at which time he had convulsions lasting ten

minutes; the limbs were stiff, the eyelids closed, the eyes turned up; the whole body below the waist cold, no jerking, no froth at mouth.

During the six months following, the lower limbs remained cold and bluish. It was necessary to cover them with wadding. After the convulsions he was probably attacked by pulmonary congestion which lasted during six weeks; afterward his health became moderately good. Nevertheless he has fasted for two or three days, taking neither food, water nor milk. If forced to drink he vomited. He drivelled up to 18 months. He never has been clean.

At 25 months he was placed in the care of a relative in the country. At three years of age when his mother took him again she observed attacks of convulsions which did not occur formerly. He cried; his eyes closed; his head fell over; he remained unconscious for some minutes; then opened his eyes. These seizures recur about twice a week; sometimes a month elapses without an attack. When a year old he began to hold himself erect by the side of a chair; he has never walked alone. Speech is about nil. He appears to understand sufficiently well what is said to him; seems affectionate with his relatives. When we have him brought before his mother, he cries on seeing her in a strident voice "like one possessed." He draws his head near; he does not kiss, but caresses with his hands. He sometimes becomes very angry when they do not do as he wishes. He knows how to serve himself a little with a spoon and a fork, but cannot drink alone. He must have had considerable ring-worm of the scalp. No enlarged glands, no abscesses, and no eruptive fevers. He passed at one time some earth worms. No onanism. Several physicians were consulted and declared that nothing could be done.

Actual condition January 15th, 1888.--Head symmetrical, a little square. Occipital region somewhat large; parietal bosses a little prominent. The hair is rather abundant, of a brown color bordering on the red. The scalp is covered with little crusts and scales. The forehead is scarcely 4 cm in height; it is narrow and depressed laterally. The eye-brows are well marked and rather thick. The upper eye-lids are swollen noticeably and hide in part the ocular globes. The lashes are long and stick together (ciliary blepharitis). The eyes are small, the irises of a clear blue; the left seems to be set a little deeper than the right. The cheeks are very thick and swollen. The nose is small with a flattened bridge and wide nostrils. The mouth is open constantly; the lips are voluminous and the lower hangs down. The chin is small, round and almost hidden by the dependence of the inferior lip. The ears are normal, well hemmed and with distinct lobules.

	1887	1888
Horizontal circumference, maximum.....	50½	50½
Bi-auricular " ".....	27½	31
Occipital protuberance to bridge of nose.....	33	33
Maximum anterior-posterior diameter.....	17.3	17.3
Bi-auricular diameter.....	11	11
Bi-parietal " ".....	13	15

Dentition.—Upper maxillary: four temporary incisors deviated, partly destroyed by caries; canines half erupted, a little out of the dental arch, sound. Two premolars on each side separated from the canines by a rather wide space. Inferior maxillary; central incisors only; canines and first temporary premolars: the others have not emerged yet. The alveolar edges are very much developed. Properly speaking, there is no articulation.

The *neck* is short; it is impossible to feel the thyroid gland. The supra-clavicular spaces are filled in with lipomatous masses. The thorax is depressed below the nipples and projects on a level with the false ribs. The abdomen is large and protuberant and recalls the appearance of a batrachian abdomen. There exists a small point of umbilical hernia. The armpits are distended by lipomatous masses. The vertebral column presents no curvature. The upper limbs are bulky and short; the bones of the fore-arm have an inward curve; the hands are broad, swollen and always somewhat cold. The lower limbs resemble the uppers; the femurs are bowed anteriorly ("sont incurvés"); the legs are like hoops ("en cerceau"); the feet are short, thick and cold like the hands.

Lipomatous masses are found at the level of the hips and of the upper part of the internal face of the thighs. The reflexes of the patella are very well marked.

Genital Organs.—Penis very well developed, sacs retracted, median raphe very pronounced. Testicles not descended. Phimosis complete. Glans penis ("la verge") is 4 cm long and 5 cm in circumference.

The skin is without hair, rugous, dry, puffed, yellowish, except on the surface of the feet and hands where it is rosy. Slight furfuraceous desquamation on the surface of the fore-arm and legs. There are four vaccination scars on the upper arm. The general sensibility seems to be preserved in its different ways. It is the same with the special sensibilities so far as the intellectual state of the child permits one to judge; assafoetida placed under the nostrils, or colocynth put on his tongue, causes him to cry and make grimaces. Circulation and respiration are normal. He holds the spoon or fork aright, but can not help himself. He is neither greedy, salacious, nor voracious. His mastication is very defective; He eats by sucking in; he does not like meat; if pieces are put in his mouth he rejects them; does not ruminate; does not vomit; has daily stools, no control of the sphincters.

The child walks only when supported under the arms, then very clumsily; he holds himself up rather well by chairs or the bed; when put into a go-cart he holds himself properly and makes it go by himself. Prehension is normal, the child seizes all objects which are presented; carries bread to his mouth and feeds himself. Sleep, good. No convulsive movements. Attention easily fixed; mild and affectionate disposition. Fernand understands what is said to him, but cannot pronounce a word. The voice is shrill, harsh and guttural.

Height, 72 cm; weight, 11 kilogrammes.

TEMPERATURE

	MORNING	EVENING
March 31st.....	37°·5 C	37°·C
April 1st.....	37°·2	37°·4
“ 2nd.....	36°·7	36°·8
“ 3d.....	37°·4	37°·2
“ 4th.....	37°·4	37°·4

The temperature thus appears a little below normal; the same as in other cases.

February 17th.—A double purulent ophthalmia, cured at the end of the month.

May 31st.—The child seems to be suffering, has chills and some oppression, he coughs and does not eat. Temperature, rectal 37°·2 C.

June 1st.—The cough and oppression have increased. Respiration 25; temperature, rectal 39°·5. Tongue indicates indigestion, no vomiting, a little diarrhœa. Percussion deadened both anteriorly and posteriorly on the right over the entire lung. Rales fine with bronchial breathing. At the left are bronchial rales. Evening, temperature, rectal, 39°·8. Treatment; emetics, vesication, bouillon and milk.

June 2nd.—The dyspnœa, which had diminished a little after vomiting, reappeared to-night and persists. Adynamia, pronounced. Temperature, rectal, 39°·2. Same medication locally. Treatment; Todd's potion. Evening.—At the time of the second visit, the temperature was 40°·7. B—was seated in order to examine the chest; he paled and stopped respiring; beating of the heart slackened. Artificial respiration was tried, also, stimulating friction, but in vain. A quarter of an hour after death the temperature was 39°·8; one hour after 38°·2; two hours after 37°.

AUTOPSY, June 4th.—*The Head.*—Scalp of normal thickness, pale, moist, as if washed. Skull a little thick and normal. Anterior fontanelle persists, measures 6 cm antero-posteriorly and 4 cm transverse-ly. Dura mater very adherent to the cranium, chiefly on a level with the large fissure. Removal of the encephalon very difficult. Brain soft, convolutions soft, gelati-form, like foetal-brain. Immediate examination being impossible the brain was put in alcohol to harden. (This brain was mislaid or thrown away by the old curator of the museum so that we are obliged to confine our observations to these simple indications).

Neck.—Submaxillary and lingual glands seem normal; surrounded with little fat balls of moist appearance. A minute examination reveals no trace of thyroid gland. Thymus persists; it hides in part the pericardium, and is enveloped by a rather thick, fatty tissue. Supra-clavicular pseudo-lipomata composed of little moist fat-balls, without very clear limitations.

Thorax.—Sub-cutaneous adipose tissue little developed; one would say that it had been washed, as well as the muscles of the thorax, which are very pale. The connective tissue situated below the sternum and which joins the pericardium, has an œdematous appearance. In the left pleural cavity about a glass of liquid was found. Left lung

weighed 20 grammes; ecchymosed spots, chiefly under superior lobe; œdema and congestion of the lower lobe. Right lung weighs 240 grammes; very pronounced œdema of the whole lung; no hepatization. Pericardium contained a half glass of serum. Heart, 70 grammes, in systole; point formed especially by the left ventricle. White clots in the right auricle. "Imbibition" of the endocardium. Atheromatous plaque sub-aortic. Orifice of Botal (Foramen ovale) obliterated.

Abdomen very much distended. Intestines and stomach much dilated with gas. Stomach, liver (570 grammes), spleen (40 grammes), left kidney (40 grammes), right kidney (45 grammes), presenting no lesions. Large sympathetis on both sides appeared normal.

Here is the history of the sister of this child who is also affected with myxœdematous idiocy.

CASE VII.

Father, tuberculous at time of conception.—Abundant hemorrhages during third month of pregnancy.—False pains during last month.—Asphyxia and swelling of the whole right half of body at birth.—Morphine influence on milk.—First internal convulsions at fifth month followed by 12 to 15 crises up to sixth month.—Typical symptoms of pachydermical cachexia.—Nœvus.—New swelling of left half of body at nine months.—Death from convulsions at eleven months.

AUTOPSY:—Absence of the thyroid gland.

Bourg—Suzanne, born in Paris, January 18th, 1888. This child is the sister of the preceding patient. At the time of conception the father was already affected with pulmonary tuberculosis, to which he succumbed May 14th, 1888, and the mother was rather weak and debilitated. The parents were living together happily and *rien n'autorise a songer a une interposition*. Pregnancy:—State of fatigue continued through the first three months; from time to time pains in the head with nausea, sometimes vomiting, the same symptoms which had been observed at the beginning of the first pregnancy, (Case VI). At the end of the third month, abundant hemorrhage for three hours, which necessitated going to bed for one week. No traumatism, no emotion, no thirst, no syncope, no nervous attacks, no œdema of the feet. The last month she went three times to the Saint Antoine hospital having pains which caused her to think that she was going to be delivered. The following morning the pains would disappear and she would return to her home. Accouchement at term, without chloroform, natural, in five hours. The mother of the child relates that she lost little blood but much water after the delivery, which was normal, "at least a small chamber full", a detail absent at the preceding accouchements which were accompanied on the contrary with a rather abundant flow of blood.

At birth the whole body of the child was blue, though the head was not lodged long in the passage. Nevertheless the child cried immediately and it was not necessary to rub it. She was large, weighed 4,060 grammes. The face was swollen; the whole right half of the body was bloated; the hand and foot of this side were twice the size of the healthy hand and foot.

She was brought up on the milk of the mother, but did not nurse well the first week. At the end of a month the mother became ill (perimetritis) and had to be returned to the hospital (Feb., 1888). At that time the child had increased but little in size as she weighed only 4,400 grammes.

During the sojourn at the hospital the child had a slight bronchitis of the right side and lost considerable flesh, weighing only 3,900 grammes at her departure May 7th.

Let us here mention that for almost a month the mother took morphia to which she attributed a certain influence on the condition of her child, who was nourished exclusively from the breast.

We have said that the child was blue at birth; this discoloration was replaced the second day by an orange red which continued up to the beginning of May, when the skin became white. The mother thinks that this modification was due to the calomel which had been given to the child.

After her departure from the hospital "Suzanne improved in face and body". Towards the end of May she had for the first time internal convulsions; she started from sleep in fright, made a little jump, turned the eyes, and wrinkled the forehead. The mouth was not drawn, the limbs, it was believed, did not become rigid. Since then, up to this date, June 11th, Suzanne has had twelve or fifteen similar crises. Their duration has varied from two to fifteen minutes. During these crises neither clonic spasms nor consecutive paralysis have been noticed. Sometimes sleep is interrupted by a kind of fear with suffocation. These paroxysms would seem to occur sometimes when the child was awake.

Actual state, June 11th, 1888.—Head ovoid; the occiput forming a rather pronounced projection and the forehead being on the contrary low (*etroit*). The anterior fontanelle is 6 cm long by 4 cm wide. The posterior fontanelle persists. The parietals are turned aside (*ecartes*) in their posterior thirds. The temporo-frontal sutures are closed. The occipito-parietal sutures are open. The hair, blonde, very scarce on the surface of the vertex, rather thick on the rest of the head, a little more so on the left than on the the right. The whole scalp is covered with little scales which constantly recur in spite of washing with soap. On the left temple above the ear a congenital *nœvus*, rather prominent, of a centimetre in diameter.

Maxium horizontal circumference.....	40.5 cm
Vertical bi-auricular semi-circumference.....	22.5 cm
Root of nose to occipito-atloidian articulation.....	25.5 cm
Maximum antero-posterior diametre.....	14. cm
Bi-auricular "	9.5 cm
Bi-parietal "	10.8 cm

The forehead, very low, has equal but not prominent bosses and is covered with a fine thick down descending to the eyebrows, which are not heavy but are strewn with scales. The eyelids are swollen, of a bluish pallor, and their lashes are rather few, especially on the lower

lids. The eyes are of a clear blue and present no lesions. The nose is flat. Sometimes there is slight epistaxes and sneezing. Cheeks are full and puffed. The mouth is large; the upper lip rather thin; the lower one bulky but not drooping. The tongue is thick which fact attracted the attention of the mother. The ears are close to the cranium; their hem is rather pronounced in their two upper thirds; the lobe, rather bulky, is detached. The whole face, which is round, has a yellowish waxy tint.

The neck is short and thick, 37 centimeters. In the back the skin and the well marked underlying adipose tissue form a fold over the child's amber-necklace ("fait hernie sur le collier d'ambre de l'enfant"); it is impossible to feel the thyroid gland. The back and abdomen resemble those of Fernand. The fatty layer of the supra-clavicular spaces is more prominent than in the case of other children of this age. At the breasts, the thorax measures 36.5 centimetres; the abdomen 40 centimetres at 2 cm above the umbilicus which is a little prominent. While the back and lumbar regions are wide the pelvis appears contracted. The coccygeal dimple is covered with numerous hairs. The mons veneris is prominent. The labia majora are also prominent and puffed. The mucous membrane of the vulva is moist. The arms are short and thick. The circumference is 13 cm at the bend of the elbow and 9.5 cm at the wrist. The hands are puffed up; the fingers slightly purple and cold. (At birth the nails, said the mother, were hidden by the flesh at the end of the fingers). The thighs and the legs are also short.

Circumference at the fold of the groin 21 cm and 15 cm at the calves. The feet are thick, cyanotic; the toes normal; but the nails are scarcely formed. They did not appear at all at birth.

The child nurses well, does not vomit; is subject to constipation. Her mother has already remarked that her daughter resembles her little boy and that she presents the same appearance that he did at the same age. Height, 56 cm; weight, 4.800 kilogrammes.

July 31st.—The child appears to come on well. The skin is dry and has everywhere a waxy tint. The hair is thin. The scalp is covered with scales and pellicles. The anterior fontanelle is 6 cm in both its dimensions. The posterior fontanelle is 4 cm by 1 cm. The right frontal boss and the left occipital boss are more prominent than their congeners. The lashes are long and thick. The child gazes and smiles. The cheeks are pendent. The tongue is very thick, the saliva abundant. There are no teeth.

A recent examination of the anterior region of the neck only confirms what we have said about the probable absence of the thyroid gland. The mother says that the child droops and drags her body.

October 25th.—Suzanne had bronchitis at the end of the month of August. She recovered in two weeks. Two weeks ago, for four days, the whole left side of the body was swollen. Her eyes do not express much, said her mother, she does not smile. The past week, without motive, she has laughed aloud. She does not use her hands at all and

does not stand. Her sleep is prolonged. She seems to be very sensitive to cold. The hair is dry, chestnut red, thin on the temples and on the vertex. (The mother has very brown hair; father the same, but his moustache is red.) The scales persist: same condition of fontanelles.

Maximum horizontal circumference.....	41. cm
Bi-auricular "	24.5 cm
Root of the nose to the occipito-atloidian articulation.....	25.5 cm
Maximum antero-posterior diameter.....	14.1 cm
Bi-auricular "	9.7 cm
Bi-parietal "	11. cm

The eye-lids are puffed and bluish, as well as the edge of the lips. The nose is flat. (The mother has an aquiline nose, sharpened, a little hooked, although she is not a Jewess. Her father had a long and sharp nose.) The chest bulges out more than before. The abdomen, always large, now shows a little umbilical hernia. The pseudo-lipomata of the supra-clavicular spaces are more apparent. The feet and the hands are swollen, cold and cyanotic. The yellowish and waxy tint of the skin, especially on the face, is more pronounced. The voice is shrill like that of her brother.

December 1st.—The child became ill Nov. 15th and gradually lost flesh. The 29th she was taken with convulsions towards 4 o'clock P. M.: rigidity, then general spasms, frothing at the mouth, lasting 4 to 5 minutes. Convulsions again toward 11 P. M.; then Nov. 30th, 2 A. M. other convulsions which ended in death.

• *Autopsy*.—The child having died at her mother's house in the city, it was not possible to examine the neck. We removed the larynx, trachea, and muscles and a close examination proved to us a complete absence of the thyroid gland.

These two cases observed in the same family are entirely typical. Let us remark in passing two curious details presented equally in all the cases with which we are personally acquainted. First:—the peculiar shape of the nose of the patients—the flat nose—; then, that their parents have the aquiline or a nose of a different character. Second:—the reddish color of the hair, while the parents have brown or blonde hair.



A CASE OF SPECIAL PRECOCITY WITH EARLY DEGENERATION.

A. C. ROGERS. M. D., FARIBAULT, MINN.

M. WAS admitted to the Minnesota School for Feeble-Minded Sept., 19, 1899, being at that time about 14 years of age; weight, 105 pounds; height, 5 ft. 6 in.; complexion fair, eyes blue and hair of a light color; his expression sad and eyes downcast; no communication except to answer questions in monosyllables; habits cleanly; appetite poor, only eating as a result of much urging. He seemed afraid

of other children and so was permitted to stay in the office of the pavilion building and had his food served there; paid little attention to anything around him, standing for hours in about the same position if not requested to sit down; if seated, soon would rise to his feet again; could read and write nicely but had no desire to do so. If a letter was suggested he would state in short sentences as questioned what he wanted to say, but could not seem to remember it long enough to write it, and could write only one word at a time as it was given him. When standing he was restless, stepped backward and forward; hesitated in all his movements, at table picked up knife and fork and put them down again. In undressing he would take a garment, fold it up, smooth it, lay it down, fold and unfold it again and if urged to hurry or asked what he was doing he would say, "I want to do it once more", without any reason for so doing; dressed in much the same manner.

The family history shows two cases of insanity, a grandmother and grandaunt, also evidences of hysteria and neuralgia in other members of the same family.

His history shows that he was a strong babe, weighing twelve pounds at birth. He was artificially fed when an infant, though not from a bottle, drinking from a cup or spoon from the beginning. He began to walk at about eleven months of age and to talk at eighteen months; always was robust and healthy. In temperament he was apathetic but obstinate, with quick perception of the humorous. He went to school at the usual age, was obedient and learned rapidly, developing a special talent for drawing. His powers of observation and imitation were good. He was quiet and reserved in manner, and never took an interest in boyish sports and games. He was a great reader, and when not in school spent about all of his time with his books and pictures. He was very neat about his person and methodical in all he did, often being annoyed by other boys because they interfered with the exact order in which he kept his things. He was very sensitive, remarkably so for a child, and seemed to see far beyond his years in matters which children as a rule do not seem to understand. There always was a vein of the humorous in his nature, and he was surprisingly quick in seeing the point of a joke. His precocity took the form of ability for caricature, as shown by the sketches.

About one year before his admission to the school, or when about thirteen years old, he began to be absent-minded and dull, gradually assuming the condition described above.

Good nutrition was the main treatment employed, with attempts to get him interested in the new surroundings. After a short time he gained in weight and appearance of health, and improved mentally, sufficiently to do occasional errands with limitations indicated below, for the nurse between his building and the office. During this stage it was necessary, for some time, to telephone between the buildings to be assured of his whereabouts, as he would stop at the door of the building he was to enter and stand for an hour or more, or until some one came along to instruct him to go on. By Novem-



GROUP 1



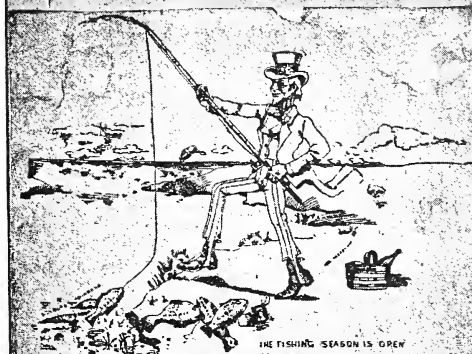
NO. 3 [6]

FIRST TRANSITION PERIOD

NO. 5



NO. 4



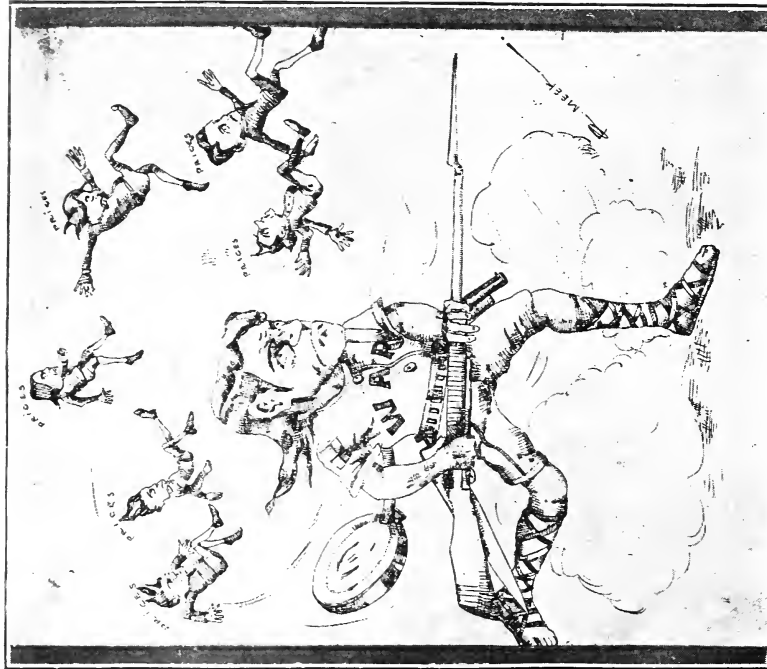
THE FISHING SEASON IS OPEN

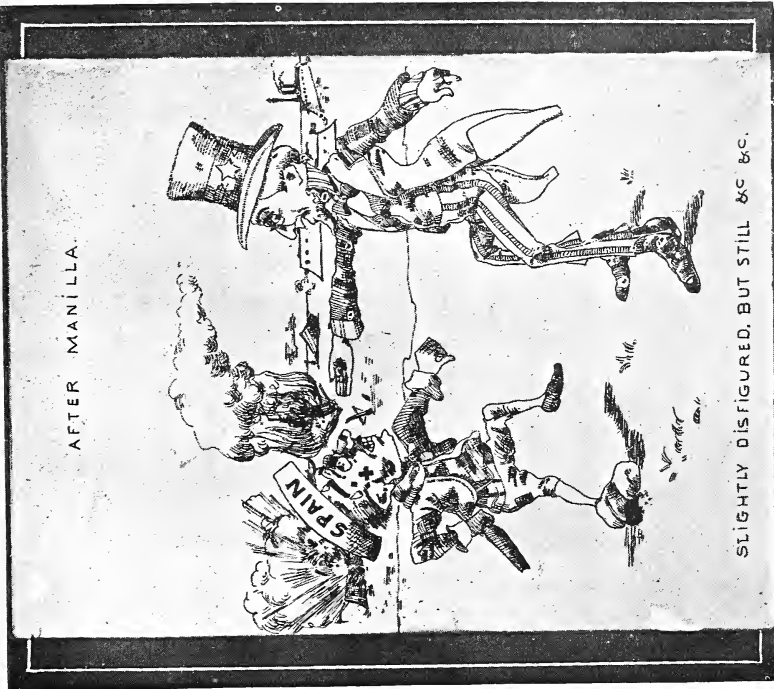
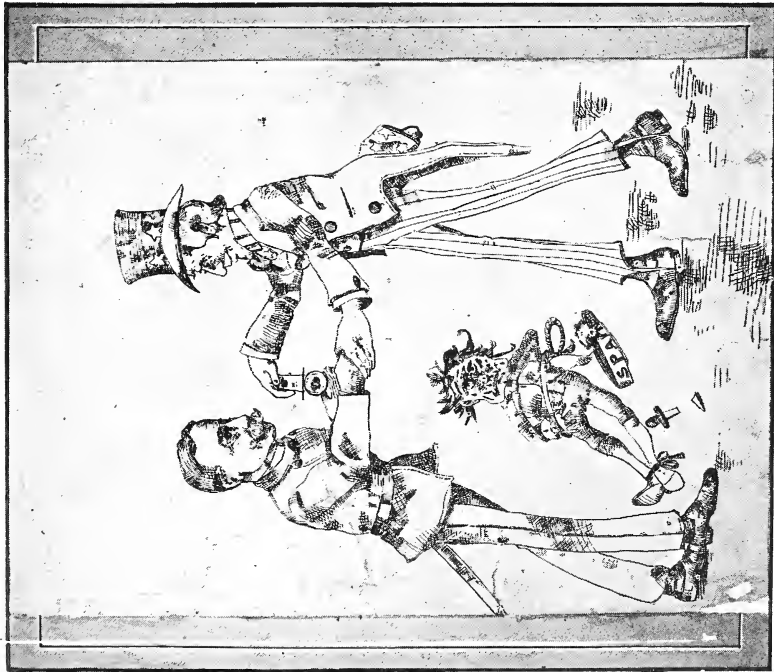


This cartoon was executed by Master P. C. M. This boy is but 12 years of age and has had no instructions whatever in drawing, except such as he may have received in the public schools. The idea of the cartoon suggests itself to him and he works it out free hand without assistance. He has executed several cartoons, much more elaborate than the above, all of which indicate a remarkable genius for such work.

NO. 6

NO. 7

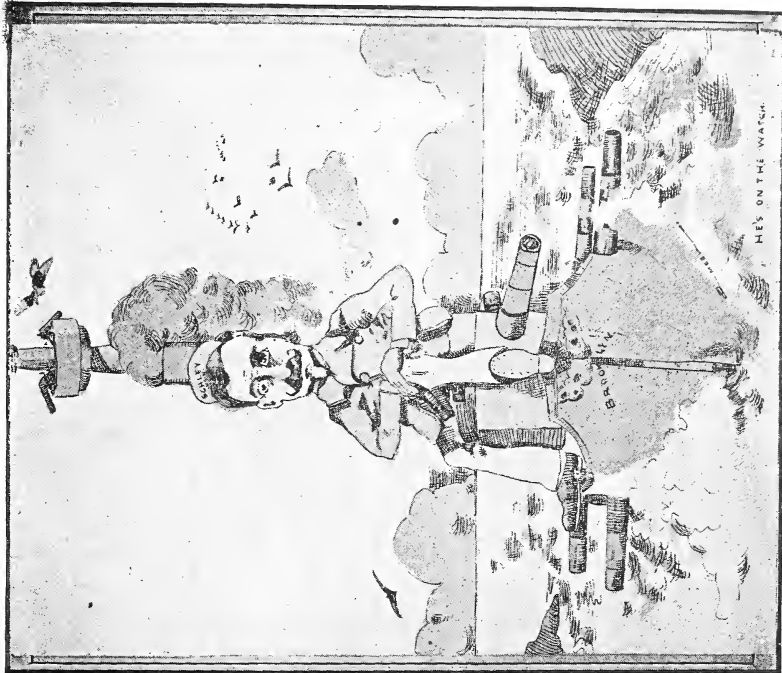
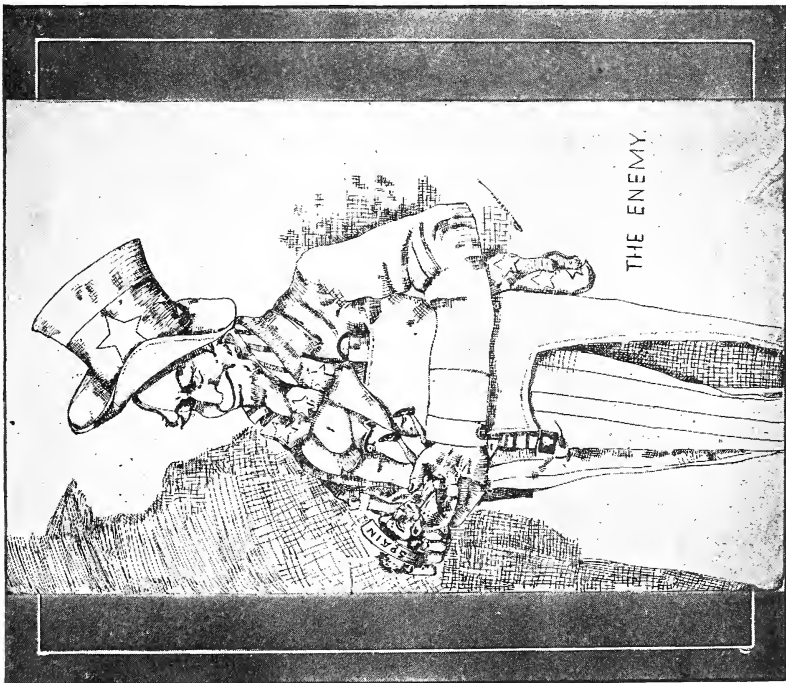




GROUP 2

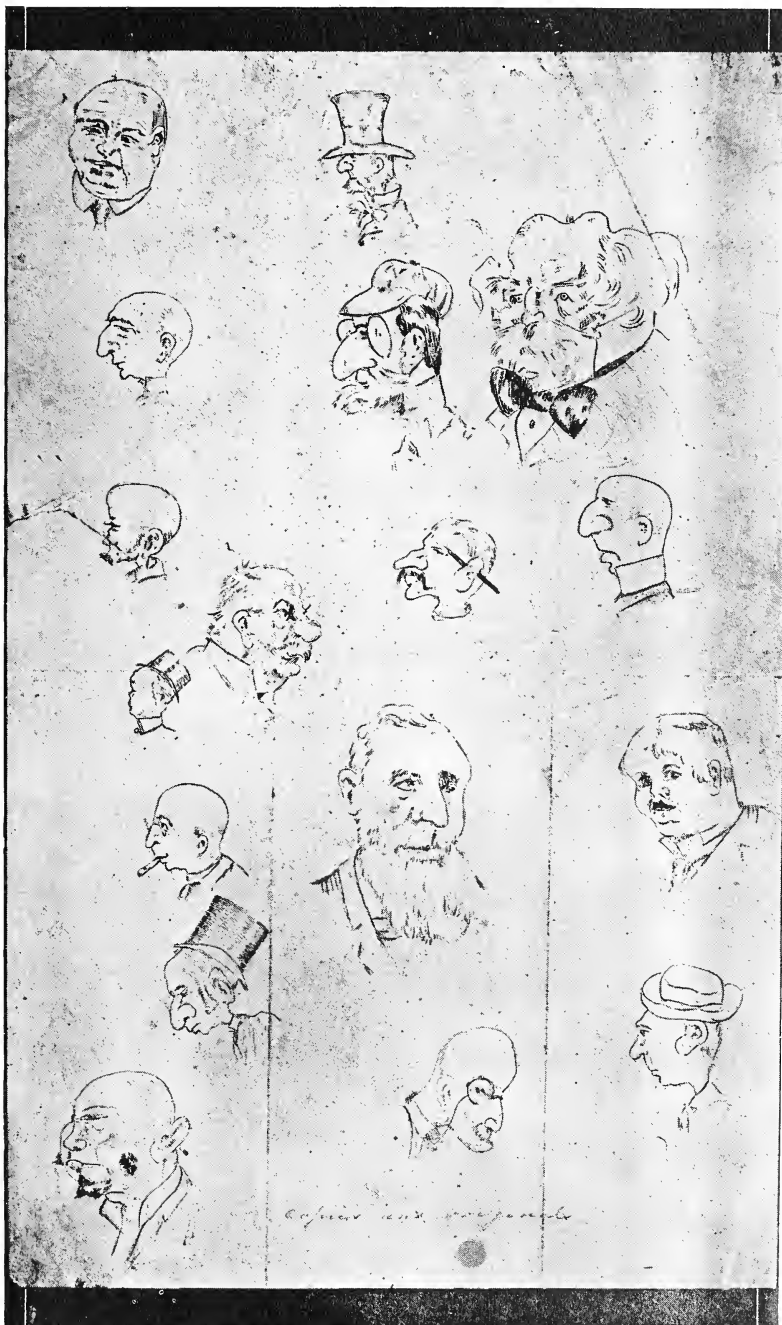


NO. 11 [d]





PREPARING THE MESSAGE.





ber he could write letters again without assistance and even draw a few sketches. Later in November he grew worse, losing interest and showing irritation if corrected or urged to do anything. He also became very uncleanly in his personal habits, failed in appetite and general nutrition and was placed in the hospital. Upon my advice, the father took him home on Dec. 20th, and he remained until April 4th, when he returned in about the same condition as when first admitted. After about three weeks he began to show signs of improvement again. The nurse devoted considerable of her spare time to him, taking him out for walks, etc. His sense of humor in part returned and he became especially mischievous and even boisterous. He would do errands but could not be trusted; would go and hide himself instead of performing his duty.

One day in the early summer he received a letter stating that some one was coming to take him home for a visit. This upset him entirely and he became very homesick, refused to eat and lost interest in everything. I again advised the father to take him home for a while.

Upon returning in September he was very homesick for a time, but gradually became interested in little duties about the building. He was placed in the industrial class in school and in time became quite interested in his work. During the latter part of November and December he netted a very nice laundry bag. He performed his errands well; wrote letters home without any assistance; and drew pictures, usually with an eye to the humorous. He would pick up a book or paper and talk about what he read; was interested in everything about him; in fact, acted very much like a normal boy.

He spent the holidays at home. When he returned in January his health was good and he was in pretty good spirits. He assumed his duties, but, though he does pretty well, he does not seem so bright as he was in the autumn. He is indifferent about receiving letters from home and does not care to write; has written only a few letters since he returned, and has drawn only a few pictures. He sometimes is quite boisterous and inclined to be profane, but as a rule is obedient. It should be noted also that he at times gets quite excited and will do ridiculous things; for instance, will run as fast as he can go through the halls and when he gets to the end will turn around and laugh. Late one evening the matron heard some noise in his room, and upon investigating found that he had thrown all his and his companion's bedding upon the floor and was having a merry time generally. He also had torn up a lot of old papers and thrown the pieces out of the window. The next morning he was asked to pick up the paper on the lawn and he not only good naturedly did this, but picked up everything else that he could find.

A study of the sketches shows: 1st, an early development of artistic ability; 2nd, a strong interest in the events of the Spanish American War, with an emphasis upon the superiority of the United States in every respect; and 3d, the development of a period of intense exaggeration as shown in numbers 16 and 17, as the mental degenera-

tion progresses.

The points of interest in this case are: 1st, The remarkable precocity both for drawing and for seeing the humor of political situations as illustrated in his cartoon sketches. Very few of them, however, could be reproduced because of the fine or close detail employed.

2nd, The early degeneration, and, 3d, the unfavorable prognosis of the case.



SPECIAL SCHOOLS FOR DEFECTIVE CHILDREN.

ELIZABETH DANIELS' NASH.

OF all the schools that have recently sprung up in this country for the instruction of various classes of unfortunate children, perhaps none have met with so hearty a welcome from the public school teacher as the special classes for the mentally deficient. As yet but few of these schools have been established, but considering the immense advantage that has already come through them to parent, child, teacher, and even the community at large, it seems likely that the good work will continue.

In the past five years one or more of these schools has been established in New York, Chicago, Philadelphia, Boston, Providence, Worcester and Springfield. Providence started the first school in 1894. The schools of Chicago and Philadelphia were established simultaneously with the one in Boston.

Europe has been far in advance of us in making practical arrangements for the education of this large and ever-increasing class of children who are not subjects for institutions, and who still cannot profit by the ordinary school curriculum. Forty years ago the first class was established in Germany and now it is estimated that more than six thousand children are receiving special instruction within the German Empire. They have demonstrated that the children that have been considered hopeless in the regular schools have been able to lead useful lives. The large extent of these classes in a practical country like Germany is perhaps the best testimony to their success. The Scandinavian countries followed next and have gone one step farther for they have separate schools for the merely backward children.

The first great impetus given to the recent organization of these special classes came through Great Britain under the auspices of various medical and charitable organizations, beginning some ten years ago and extending over a period of five years. Dr. Francis Warner conducted extensive examinations upon 100,000 London school children. The results have been given to the public in a comprehensive report entitled, "Report on the Scientific Study of the Mental and Physical Conditions of Children with Particular Reference to Children of De-

fective Constitution; and with Recommendations as to Education and Training."

Having considered the history of the special class movement, I shall now attempt to give you some description of these unfortunate children.

While it may not be necessary to go into the causation of the subject, I want to give you some idea of the heredity of feeble-minded children that you may have more sympathy for their irresponsible condition.

I heard the superintendent of a well-known institution for the feeble-minded say, "If there are those who doubt the truth of the second commandment that the iniquity of the fathers shall be visited upon the children unto the third and fourth generation,' I should like to show them a few living examples of this sad truth." However unjust these afflictions of the innocent may appear to us, it has always seemed to me that the law of compensation comes in here to help lighten the burden. For these children are usually happy and free from care, and rarely, if ever, realize their great deprivation.

There seems to be no one cause to which alone we may attribute the majority of cases of mental defect, for on investigation we find usually that several causes have acted together. Then it is nature's way to repair and build up instead of tear down so that a single transgression of psychological law rarely results in mental abnormality, but when nature's laws are repeatedly violated we must expect degeneration to follow.

Children who have drunken parents are not always idiotic, but they often inherit a nervous temperament which, when combined with aggregating causes in another generation, is apt to result in mental degeneracy.

The most important factor conducing to idiocy is perhaps tubercular inheritance, and two-thirds or more of the feeble-minded have a scrofulous constitution. In most cases the hereditary tendency alone is insufficient to produce idiocy, but it is a fact that a pathological evolution, or more correctly, a pathological degeneration of mind does take place through generations. A family history where there has been a record of insanity, epilepsy, deafness or some other nervous disorder, is usually the one where we may expect degenerate types, for these diseases act with marked efficiency upon individuals of nervous constitutions.

Consanguinity of parents was formerly thought to be a more potent factor in producing idiocy than now.

Many cases are attributed to natural ill-health, accident, or shock, and a larger number still to causes operating after birth as convulsions, falls, and frights. Parents readily give these last as causes when more often the causes are pre-natal. Most authorities agree that in the majority of cases of this kind the children have inherited some brain abnormality that renders them susceptible to convulsions, epilepsy, infantile paralysis, etc. Feeble-minded children are often the

offspring of highly neurotic parents and sometimes of the greatest minds. It would seem as if the parents had expended so much of their nervous energy that they had little left to impart to their offspring.

Mental feebleness is sometimes merely a consequence of feeble health and with improved physical conditions the mental impairment may gradually disappear. I think teachers often feel this when teaching some forlorn, half-fed child, and how powerless they are to remedy the situation.

A question frequently asked by teachers and others is, "How can you tell whether a child is feeble-minded or not?" It would certainly be vastly convenient and would save a world of trouble if it were possible to draw a hard and fast line and declare that all persons who were on one side must be normal and all persons on the other side of it must be abnormal. But a little thought will show how impossible it is to attempt to make such a division. Nature makes no leaps, but passes from one state to another so gradually that no one can fix positively the point of transition. Nowhere is this more true than in respect to sanity and insanity, the normal intellect and the deficient.

Professor Monroe describes the feeble-minded child as one having a deranged nervous mechanism, distorted perception, slight power of attention, uncertain memory, and weak will power. Deranged and distorted would seem to me better replaced by imperfect and feeble, for the feeble-minded child usually has all the senses and faculties of the normal child, only in a less degree, the human mind being reduced to a state of extreme simplicity. Thus psychologists have begun to see a valuable field for work among the feeble-minded.

There are certain marked types of feeble-minded children, as the epileptics, the paralytic, the Mongolian, and cretin, and the microcephalic and hydrocephalic types, better known as the small head and the large head, but the majority of those found in the public schools are not easily classified.

Perhaps the more noticeable characteristics of these children are their childishness and immaturity. Thus we often have the body at fifteen directed by a mental consciousness scarcely greater than that of a normal child at five. In most cases there will be found some physical abnormality, the most easily detected being an irregularity of features that sometimes amounts to repulsiveness. The body is usually undersized and the gait shuffling, and there appears to be a general hesitation and lack of confidence in all that they do, arising from a weak will power that poorly directs the imperfect muscular development. This failure of the muscles to co-ordinate is oftentimes manifested in striking defects of speech.

The lower cases often show remarkable endurance of pain when undergoing minor surgical or dental operations, and they will often mutilate themselves with indifference. The cranium is apt to diverge from the normal form and shape. There are often marked choreic tendencies or other nerve signs, and an imperfect state of nutrition is

frequently met with. The physical and mental characteristics are so intimately associated that if we find a perverted physical organism or nervous system we are safe in looking for some mental abnormality.

Although the memory is usually weak, we find instances of remarkable memories, especially along some one line. The following case of a pupil in an institution where I taught is extreme, but will illustrate my point. C—, age twenty-five, was a delicate, pale-faced youth, who was kept alive by the use of stimulants. He was a complete imbecile, except for ability to perform certain arithmetical processes. For instance if asked to reduce 3785 to its thirteenth power, he would give the answer instantly. A psychologist who had noted the case compared this ability to that of a person, who having no knowledge of music, sits down at the piano and running his hands over the keys is found to produce one of Beethoven's sonatas. Special talents in idiots have excited considerable attention. A case is on record of one Gottfried Mind who was said to be a cretin and imbecile. He was so skillful in painting cats that he got the name of the "Cats' Raphaël". Many of his paintings are now on exhibition in European galleries. In cases like this it would seem as if the one faculty had been produced at the expense of all the rest.

The most discouraging form of mental abnormality that exists among children is that styled moral imbecility. The amount of mental deficiency is usually small in such cases and the general characteristics seem to be of an epileptic nature. These unfortunate children who have inherited some nervous instability are the despair alike of parents and teachers, and their sudden outbreaks would remind us that the days of demon perversion are not over. Moral discipline seems to be of little avail, and the intelligence and skill that are acquired are often added power for evil. It is certain that these children have no place either with normal or feeble-minded children.

Having noted certain causes and characteristics of mental deficiency, we come to see what may be done for this class who, without kindly aid, cannot possibly help themselves.

It seems to be a common error to suppose that it is a kindness to parents to ignore the fact of a child's deficiency. While it is not necessary to call the child an imbecile, idiot, or feeble-minded, I believe it is right to give parents some idea of the possibilities or at least the impossibilities in each case, and if tactfully done it will rarely meet with resentment, but on the other hand, thankfulness that some one at last understands the situation. By careful questioning a mother will often paint a faithful likeness of the child herself, though with the fond protecting eyes of mother-love, unconscious that she has diagnosed a typically feeble-minded child. However, she is always anxious to tell you that "John is bright enough. He doesn't say much, but he understands all that you say to him." Then she sets forth his few childish accomplishments, which would seem amusing if it were not for the sad truth behind it.

A mother came into my class-room at the Rice School one day with her son of eighteen, a hopeless, drivelling idiot. She had consulted physicians, quacks, and mediums in the hope of solving her problem and had made various attempts to have the boy attend school. He could neither speak nor express his wants in any way, and still his mother said he was all right only he couldn't speak, but that he understood all that was said to him.

A pathetic case was told to me of a wealthy father who spent his whole fortune in seeking help for his imbecile son, hoping against hope, until the boy grew so old that the only probable help for him in the way of painstaking instruction was lost and the means for future comfort even gone.

I know a particularly intelligent mother who realized that her child was not as other children, but had never been told the truth by the various physicians she had consulted and so led herself to be deceived by false hopes. She had been told by them that her boy would come out all right. "Wait a year." "Wait two years." "Wait until he is seven." Fearing and yet wanting to know the truth she took the child to Waverly to consult Dr. Fernald, Superintendent of the Mass. School for Feeble-Minded Youth. He understood the case perfectly and told her the whole truth in a most kind and interested manner. She afterwards told me that the truth was a great shock to her, but that she couldn't be thankful enough to Dr. Fernald for letting her know it all. She had been spending large sums of money on this child, whom she now knew would never be able to take his place in the world and was thereby depriving his brothers and sisters of their rightful share. Now he has the advantages of the best special instruction and is improving far beyond their expectations.

When we come to regard feeble-minded children in the light of individual treatment we see how hopeless it is to attempt to apply the same methods of instruction to all. To illustrate, these children might be roughly grouped under two heads, those who are dull and apathetic, and those who are nervous and easily excited. The former must have their dormant faculties aroused and stimulated while the latter need guidance and control over their misdirected energies. Children of the first class make quite as encouraging pupils though far less interesting than the latter, I think.

Whatever the peculiar characteristics and temperament may be, and these children do differ widely, even more so than normal children, it has always seemed to me,—the need for painstaking, thorough instruction can hardly be over-estimated. In the words of the prophet it must be "precept upon precept, precept upon precept; line upon line, line upon line; here a little and there a little." Slipshod, haphazard teaching meets with far worse results than with normal children. Book-learning is the most difficult kind of knowledge for them, and is of the last and least consequence. Time spent on abstract teaching of any kind is practically wasted. Whatever the instruction it must be simple, practical, and as concrete as possible. Dr. Seguin, writing of

this class of children, expressed an important truth in all education when he said "that the psychological education of the senses is the royal road to the education of the intellect; experience, not memory, the mother of ideas."

It may seem a little discouraging after inflicting upon you so many dry facts to say that after all you can do but little for the feeble-minded child that is under your care.

In the first place he will require far more time than you can afford to give him, and he can never be at his best when subjected to hopeless competition with normal children. At first thought it would seem as if it were better that he should at least appear to be doing as the rest, especially if so little can be done for him. In the case of the dull, listless child this method might succeed, but when the nervous child is not intelligently occupied the idle hands soon get into mischief. In the physical exercises where it seems as if he might at least imitate the others, he will be annoying because of his uncertain, forceless motion. The feeble-minded child can be easily detected here.

My advice is: First—Learn to expect little from your deficient child. If he has an intellect of a child half his years, regard him as of that age in the work that you give him. Second—Give him something to do that is within his comprehension. These children are said to learn more with their hands than with their heads, and surely the intellect grows as the hand becomes skillful. Give the child with even a bit of an idea of drawing some paper and colored pencils and perhaps with them some pictures to color. Let another child whose hand is less trained have some object that he can trace about, preferably square or circular, then give him some scissors to cut out the squares and circles. Or even give him beads to string if the child's intelligence isn't above it. Perhaps he is even advanced enough so he can copy simple words. Then ask him to make lists of words of four letters that he finds in his reading book. This will also serve as number-work.

Particular cases will suggest the line of work most helpful. For instance, a child whose finger movements are not easily controlled would find valuable exercise with the peg-board. Most kindergarten materials will be found useful. A concert exercise, the pleasure of which never wore off with my children, was the sewing of large kindergarten cards. The skill which they gained in speed, attention and in making no false motions was truly marvelous. No more genuine interest and enthusiasm could have been taken by a class of normal children.

Rewards and punishments seem justifiable for they are the only incentives that seem to reach their sluggish natures.

The bright children in a class do form strange notions of these children. I presume we can all recall instances in our own childhood when we either looked with fear or scorn on some poor imbecile. In a country school that I knew well was one of these unfortunates. It was before the days of free school supplies and the teacher made glad the

heart of each child by the gift of a lead pencil. A little girl of six went home and said, "The teacher gave all the children a lead pencil, and Rosy Wright, too."

My experience in examining the two hundred children reported in the Boston schools as feeble-minded led me to think that some general knowledge of these children would be of benefit to the teacher. I hope I haven't spent too much time in what may seem to you unnecessary and uninteresting details. I shall leave the work of dealing with the individual cases with Miss Lyma whose connection with this work will make what she has to say more valuable, for she can tell you not what has been done, nor what may be done, but what is being done for the elevation of these, "the least of God's little ones."



SELECTED ARTICLES

CORRECTING SPEECH DEFECTS.

OLIVE E. D. HART, TEACHER.

ACCCEPTING your invitation to read before your Society a paper on the Correction of Speech Defects, from the standpoint of a teacher, I give you some details of my work in that direction.

My experience was gained during six years' teaching in state schools for the deaf, mainly at the Pennsylvania Institution at Mount Airy, and several years' subsequent work as a private teacher in New York.

I wish to say that my methods are entirely natural, although the result of long study. Every exercise I give has reference to one of two things: the establishing of correct habits of breathing or correct positions of the vocal organs in the utterance of individual sounds.

Correcting defects of speech, which are the result of an existing malformation or of mental disqualifications, is certainly experimental and the degree of success attainable never entirely satisfactory, without the aid of the surgeon or dentist for the former and practically endless repetition in the latter case. I am not quick to attribute defects to hopeless mental conditions and would be inclined to try to develop the intelligence along these lines before giving the case up as lost, for mental backwardness and discouragement it seems to me might as easily arise from the inability of the child to set himself right as regards his speech as the contrary.

I usually find my pupil with the chest flattened and dropped and the head starting off on independent excursions before the body. My first lesson is on a correct carriage and this is included, frequently, in most of the lessons afterward. This night, it seems, he taught at home, but it rarely is. In fact, most stammering, stuttering, lisping

and other speech peculiarities might be prevented before they become habits and result in nervous breakdown in speech, if we did not admire and encourage "baby talk" and would introduce a little simple kindergarten instruction on good sounds at that stage. When the head is erect and the chest high, natural breathing must take place. To make this a habit is the first requisite and no further exercises are required except in the interest of physical development, when I make use of any or all of the breathing exercises used by teachers of elocution, singing or light gymnastics, as the occasion may require. The principal action of breathing, for good speech, should be placed below the chest in the diaphragm.

As soon as possible I institute the use of bed-time exercises, when the child can lie flat on his back, without a pillow, keeping the chest full of air, the mouth closed, so that inhalation and expiration take place wholly through the nasal passage. For this I must depend upon the zeal of the pupil or his mother. Many people in this condition are mouth breathers and if sleep could come while the mouth is closed by an effort of will, there would perhaps be some hope that a better habit was in process of establishment. It stands to reason that speech cannot go out smoothly through the mouth, while breath be taken through that channel. From the beginning, it is important to maintain a reasonable rate of speed in speech, so that the breath may have time to keep the lungs filled through the the proper channel, the nose.

After the subject of breathing comes vocalization. Correct speech depends on correct vowels or vocal consonants and a free use of all the muscles concerned in speech, those of the lips, the tongue, the soft palate and the vocal organs back of it. Each separate element of speech must be studied alone and in combination with others which makes it difficult and be practiced unwearyingly, until they all come smoothly, the positions correctly and all unnecessary muscular effort is done away with.

In most cases the defective sounds are limited to five or six, which throw the entire speech out of gear. The faulty sounds or positions which seem most common in ordinary defects arise from a substitution of d for g, t for k, making the tip of the tongue do the work the back should be doing, substituting f or v for s or th or vice versa; l for r, n for ng, ng for l, ng for r, sh for s or s for sh, v for w or the opposite, w for l or r, w for wh. I have noticed a similar substitution in writing, which makes me think this form of defect has its beginning in mental inattention, but at all events, it is to be mastered with practice, and mental gymnastics must go hand in hand with vocal exercises in this work. My idea is not to draw special attention to defective sounds but to make each sound the subject of special study and practice and so avoid increased self-consciousness and nervousness at defective points. Time may perhaps be lost at first in this way, but general confidence is gained and the result reached in the end is more satisfactory.

The placing of the voice is as important a step as any in correcting speech. Defects are often caused, almost wholly, by a voice which is pitched too high. The quality of the voice is affected by the position of the lips, teeth, tongue and soft palate, as well as the vocal cords. Exercises to open the throat and gain control of the palate, to make the tongue obey the will, to subdue the unruly jaw and teach the lips to play only their legitimate part of speech, all belong to the red tape of building up correct speech.

For several years during my connection with schools for the deaf, classes of defective pupils fell to my lot and I had to study out methods to suit their individual needs. In correcting speech defects it is impossible to generalize, one must specialize. I have never found any two cases which could be treated in just the same way.

The length of time taken to correct individual faults is also largely a matter of circumstances. The lesson, an hour or so daily, or at intervals, is not followed up at home and the ground must be gone over again. The mind has become accustomed to the bad habits of speech. They serve the purpose of conveying thought to a playmate, the pupil is indifferent and all the work is left to the teacher. Success depends so much on the co-operation of the pupil, his constant effort toward correctness, and he is dulled and discouraged by the failures of the past. Sometimes a slight defect in the action of one organ or the pronunciation of just one sound may account for the most abnormal speech and having discovered the cause its correction may be the work of only one or two lessons.

It is necessary to correct faults of speech to have done away entirely with the A B C's of childhood and to have a thorough understanding of the phonetic principles of language and on the teaching of this to a pupil much of success may depend.

Perhaps I have not said enough of breathing as the basis of the whole thing, but that is a subject which the teacher must keep always before the mind of the pupil.

In conclusion I would say, there is no royal road to success but the work of both pupil and teacher and no trick can accomplish anything permanent. A habit of this kind cannot be formed in a day any more than any other habit can be settled upon one for a lifetime in a day.—*Brooklyn Medical Journal*.



AN IMPORTANT POOR-LAW QUESTION.

BEFORE LORD STORMONTH DARLING.

JUDGMENT was pronounced in this action, which related to the liability for a pauper named Peter M'Cann, who is an inmate of the Dumbarton Poorhouse. He was born on April 12th, 1880, and when in his third year he developed hydrocephalus. The disease

became chronic. Its results were total blindness, paralysis in both legs, and partial loss of power in the right hand, besides the characteristic enlargement and motion of the head. His father died on April 6th, 1887, having at that time a residential settlement in the parish of Eastwood, and his mother received parochial relief from that parish between May 17th, 1887, and April 29th, 1889. The pauper resided with his mother until October, 1887, when he was admitted to the Broomhill Home for Incurables, in the parish of Kirkintilloch. He remained there supported entirely by the funds of the Institution until September 28th, 1899, a period of nearly twelve years. His removal was due partly to his having been found somewhat difficult to manage, but mainly to the directors having resolved to enforce more strictly than formerly a rule of the Institution against the admission of mental cases. He was then taken to the Dumbarton Poorhouse on a medical certificate which answered "No" to the question whether he was "lunatic, insane, idiotic or of unsound mind."

Lord Stormonth Darling said the mental state of the pauper had been the subject of a good deal of evidence presenting considerable difference of opinion. Dr. Yellowlees and Dr. Clouston classed him as a hydrocephalic imbecile whom they would have no hesitation in certifying as insane. But they admitted that he was articulate in speech, that his words conveyed his meaning, that he had no delusions, and that he had a "wonderful memory," for he could repeat whole Psalms on being told their numbers. His Lordship thought the fair result of the evidence was that the pauper's mind was weak but not disordered, and that he was not by any means an idiot. The first question was whether the pauper had been mentally capable of acquiring a settlement by residence in the parish of Kirkintilloch since he emerged from pupilarity on October 12th, 1894; and, if so, the second question was whether his residence in a charitable institution at the expense of the charity was of such a character as to satisfy the provisions of Sec. 1 of the Poor-Law (Scotland) Act, 1898; or, in other words, whether he could be said during his residence there more than three years to have "maintained himself without having recourse to common begging and without having received or applied for parochial relief." In all Poor-Law questions it was of much more importance to preserve uniformity of decision than to make any particular case square exactly with one's own notions of logic, or even equity. His Lordship was alive to the difficulty of holding that a residential settlement, which involved the idea of a certain amount of volition and choice had been acquired by one so absolutely helpless as this lad, whose very livelihood depended on his going wherever he was sent by those who were either willing or bound to support him. But it seemed to him that a rule had been established in the cases of *Cassels v. Somerville* and *Scott and Nixon v. Rowand* to the effect that, where a person had not been certified as a lunatic, mere weak mindedness or congenital imbecility not amounting to idiocy, though coupled with incapacity to earn a living, would

not prevent acquisition of a residential settlement. The second point was one of considerable general interest, and it had not been in terms decided by this Court. There was undoubtedly some hardship in a parish, within which benevolent persons had set up a charitable institution, being thereby saddled with liability for imported paupers. Possibly such a case might be a fit subject for Parliamentary consideration. But he had to deal with statutes and decisions as they stood, and it seemed to him that the words in Section 1 of the Act of 1898, requiring that the pauper "shall have maintained himself without having recourse to common begging and without having received or applied for parochial relief," did not mean that he should have maintained himself by his own industry or out of his own proper funds, but were satisfied if he received from charitable people the means of maintaining himself without begging and without recourse to the parochial funds. That his Lordship thought was the result of the cases of *Thompson, Hay v. Cumming*; *Forbes v. Marshall*, and *Hay v. Ferguson*. He was therefore of opinion that the pauper had acquired a settlement in Kirkintilloch and he assoilzied the defenders, with expenses.—*Glasgow Herald*.

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EDITORIAL.

The Question of Classification is always a difficult one since nature shows no fixed boundaries, but each group shades over into the next. This is most strikingly true of mental diseases; and while the dissatisfaction with the old groupings has been wide-spread and of long duration, as has been shown by the many suggested changes, yet none of these have met with marked favor. But more extended and thorough clinical studies have led to new endeavors in this direction as is shown by the work of the Heidelberg school under the leadership of Kræpelin. One of the most interesting groups that he has made is that of *Dementia Praecox* which he describes under three forms; that of *hebephrenia*, first described by Hecker; the *katatonia* of Kahlbaum, and *paranoia* which includes most of the cases usually classified under this name. This disease shows a great variety of symptoms, but is characterized by ending in a peculiar and frequently low grade dementia.

In this number we offer an article on "A Case of Special Precocity with Early Degeneration," which is interesting in this connection; and it would no doubt be classified by Kræpelin as the hebephreniac form of Dementia Praecox. It shows the precocity which Christian finds as characteristic of the disease and also the exaggeration in the drawings which is mentioned by Kræpelin. This class of cases forms a very interesting chapter to those interested in feeble-mindedness, since it shows mental degeneration appearing at a later stage in the mental development. It appears most frequently at puberty or during adolescence and seems to be intimately connected in some way with the evolution of the sex life. Forming, apparently, a connecting link between imbecility and the later insanities, a study of these cases will no doubt throw light on the early stages of mental degeneration.



BOOK REVIEW.

"A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE," by C. B. Burr, M. D., Published by F. A. Davis Company, Philadelphia.—

The applicants for positions as nurses and attendants in hospitals for insane are, as a rule, possessed of a very limited education, usually equivalent to less than the course of the village graded schools. Any text book, therefore, to be generally serviceable for training classes in these Institutions, must be very wisely prepared with reference to (a) selection of material, and (b) its manner of presentation. Lack of mental discipline, rather than any deficiency in natural mental ability is found in the pupils. While the subjects must be scientifically presented, they must be couched in simple language and re-inforced by suitable illustrations. To have some sort of a text book is also imperative, because it is very difficult for many of these pupils to follow lectures closely and be obliged to depend upon them solely.

Dr. Burr's Primer is a very good work for this purpose, and the glossary and use of explanatory phrases or words, parenthetically following technical words, are excellent features of the book.

The subject is treated under the heads:—

Part I—Psychology.

Part II—Insanity.

Part III—Management of Cases of Insanity.

The first two parts are intended to present the outlines of the subjects indicated by the title, and the author has succeeded in reducing the subjects to their simplest terms.

Part III is full of good points and the teaching here inculcated should be thoroughly impressed upon every person who undertakes the care of insane patients.

—A. C. R.

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ORIGINAL ARTICLE.

IDIOCY WITH PACHYDERMICAL CACHEXIA

BY BOURNÉVILLE, PHYSICIAN AT BICÊTRE.

Translated by Clarence A. Perry and Julia St. J. Wygant, M. D.,

Medical Assistant, Syracuse State Institution for Feeble-Minded Children, Syracuse, N. Y.

CASE VIII.

FATHER, intermittent fever, general paralysis.—Paternal great-grandfather, apoplectic.—Paternal uncle, migrainous; mother, nervous.—Paternal grandfather died of tuberculosis.—Maternal grandmother, paralyzed.—Maternal great-grandfather, insane.—Maternal uncle, migrainous.—Mother, nervous, a little microcephalic.—Maternal grandfather died from tuberculosis.—Maternal grandmother, hæmiplegic.—Maternal great-grandfather insane.

Father in the first stage of general paralysis at time of conception.—First convulsions at eight months.—Bronchitis.—Regular symptoms of myxœdema.—Died at the age of seven years.

Autopsy:—Persistence of anterior fontanelle.—*Complete absence of the thyroid gland*.—Persistence of thymus.

Cab—Marie Pauline, born at Sedan, July 29th, 1882, entered the asylum at Villejuif under the treatment of Dr. Briand, April 29th, 1889, (Mar. 24, 1889). (The description which we gave in our communication to *l'Association française* was incomplete. Since then we have found the mother and have personally obtained from her accurate information.)

Information furnished by the mother:—Father, 44 years old, policeman, has been for three months at the asylum for insane at Ville-Evrard under treatment for general paralysis. During the last seven years he has been subject to fits of anger and beating his wife; for a long time, but more so within the last year, he has given himself up to drink. Since his marriage and up to the present time he has been subject to monthly attacks of well-defined intermittent fever. [Father, sober, died from an attack of apoplexy in one week.—Mother, very nervous, healthy, not addicted to drink.—No particulars of paternal or

maternal grandparents. A maternal uncle died insane.—Brother, migrainous.—Sister, nervous, and of a violent disposition; she has two healthy children, without convulsions.—No others insane, no epileptics, no other paralytics, no children like the patient.]

Mother, 33 years, nervous, migrainous, brunette, intelligent, features entirely different from that of the child.—Slight prognathism of the upper jaw. Teeth badly set; ears badly hemmed.—[Father, sober, died at 27 years old, tuberculosis.—Mother, irritable, has been paralyzed on the left side for four years.—Paternal grandfather died at 66 years of chronic bronchitis; laborer, sober.—Paternal grandmother migrainous, died at 81 years of cancer of the face. Maternal grandfather died insane at 72 years.—Maternal grandmother died at 84 years.—A paternal uncle and aunt died from tuberculosis; another uncle in good health. It is the same with two maternal uncles and one aunt as well as the children of these. No brother or sister.—No others insane; no goitres, though there are some in that part of the country.]

No consanguinity.—Father from Mirecourt; mother from Sedan. Difference in age, 11 years.

Four children.—1st, girl, 10 years old, intelligent, nervous, no convulsions. 2nd, girl, died from meningitis at 2 years. 3rd, girl, died at three years from inflammation of lungs, no convulsions. 4th, Pauline.

Our patient.—At the time of conception the father, we are assured, presented no indication of mental trouble; was not violent. The couple were living on good terms; but for some time the husband had been addicted to drink, and I think, said the mother, that the little one "was conceived when he had been drinking". Pregnancy rather bad. "I vomited from the first day up to the last". No blows, no falls, no emotions, no alcohol or opium; at 7 months without known cause, labor pains came on suddenly. "The womb remained opened", according to the midwife. No metrorrhagia. During the last two months pains every week. Accouchement at term, without chloroform, in fifteen hours. The other deliveries were more rapid. At birth no asphyxia, though the cord encircled the neck of the child twice; she cried immediately. The head was large, no deformity; the nails were regular; no exaggerated development of the hairy system. Nursed by mother up to five months; then on the bottle with cow's milk. Up to eight months she did very well, but she had a thick tongue, hands and feet; and waxy skin. From birth it was noticed that she had a different voice from other children. At eight months in the course of her first bronchitis, at the end of the second week she had had daily for three days, and different times during the day, convulsions which lasted ten minutes; she became stiff, very blue, had shocks in the four limbs, equal on both sides. From the time of these convulsions the child has not grown at all, said the mother. She became stout, but not tall; and her abdomen became more voluminous; then only was the existence of the umbilical hernia noticed.

First tooth at 17 months; she did not have twenty teeth when she entered "Villejuif"; she did not cut her eye-teeth until she was four.

At home she remained seated most of the time, amusing herself with a doll and with playthings, whether alone or with her sister of whom she was very fond as well as her mother. She recognized both of her parents; her disposition was savage; she did not like to see strangers; very choleric; she stiffened herself, threw herself back in her chair and beat her head with her fists. No tics, no onanism, no worms. No measles, no varioloid, etc. No whooping cough, no sore throat. She had always drivelled and her tongue hung out of her mouth. Frequent coryzas. First ophthalmia at four months, since then it has recurred frequently; the eye-lids constantly stuck together. Scales of impetigo on the temples and eczema of the ears; some swollen glands ("adenites") about the sub-maxillary region. No otitis. Several times there have been boils about the body.

May.—Dr. Briand, having kindly sent the patient to Bicêtre to be photographed, we profited by the occasion to collect the following summarized notes:

Head voluminous, contracted in front, especially in the posterior half; forehead rather high, but very narrow. Persistence of the anterior fontanelle. Hair coarse, harsh, black, and rather thick on the sides and in the back; of a black shading to red and rather thin on the middle of the parietals and of the frontal. Numerous scales on the scalp, asquamous and recurring. The eye-brows are thin. The eye-lids are swollen, of a bluish pallor and are affected with chronic blepharitis. The lashes are long, thick on the upper and thin on the lower lids. There is a slight entropion of the lower left lid. Iris blue. No lesions of the ocular globes.

Nose flat, "épaté". (The father has an aquiline nose; hair very fine and brown. The mother has an elongated nose, a little turned up at the point; hair, brown, and fine.) Cheeks thick, especially in the posterior portion, giving ballottement, gelatiform. Erythema of the left cheek. Lips very thick, mouth rather large; tongue very thick, which protrudes beyond the dental arches which are flattened in front. Some of the upper teeth are worn away; the palatine arch is broad and flat. The chin is nearly double. Submaxillary glands are rather large. The ears are well hemmed; their lobules are adherent and a little raised. The face is rather round. The features are those called cretinoid which we have remarked in the case of the other patients. The gaze is vague, but can be fixed.

Maximum horizontal circumference.....	49	cm
Bi-auricular semi-circumference. Root of the nose to the occipital articulation.....	36	cm
Antero-posterior diameter.....	17.2	cm
Bi-parietal ".....	13.5	cm
Bi-auricular ".....	10.4	cm

The neck is very short; its circumference is 30 cm. The cartilages of the trachea are very distinctly felt, but neither ourselves nor our internes were able to find the thyroid gland. There are very pronounced pseudo-lipomatous quivering masses in the supra-clavicular spaces and arm-pits. The trunk is thick set; the abdomen broad and

voluminous, especially in the upper half or above the umbilicus, with a point of umbilical hernia. The labia majora are very pronounced; the vertebral column is regular. The pelvis and the buttocks are narrow as compared with the upper part of the thorax.

Circumference of thorax at arm-pits.....	50 cm
“ at nipples.....	53 cm
“ at umbilicus.....	16 cm

The upper limbs are short and thick; the hands are bulky, thick, red, and cold. The lower limbs present the very same features. The skin has a dull, waxy tint, wrinkled.

UPPER LIMBS.		RIGHT	LEFT.
Circumference at arm-pits.....		15 cm	16 cm
“ 5 cm above olecranon.....		14 cm	14 cm
“ 5 cm below “.....		15 cm	16.5 cm
“ at wrist.....		10.5 cm	10.5 cm
“ at metacarpus.....		13 cm	13 cm

LOWER LIMBS.			
Circumference at fold of groin.....		24.5 cm	25.5 cm
“ at 5 cm above patella.....		19.5 cm	22 cm
“ at 5 cm below patella.....		16.5 cm	17.5 cm
“ at malleolus.....		12 cm	12.5 cm
“ at metatarsus.....		12 cm	13 cm

The height of the child is 70.5 cm; weight, 10.100 kilogrammes. Ca—does not walk and shows great resistance when movement is necessary. Prehension exists, but is slow and imperfect; nevertheless, Ca—can hold things in her hands and can carry a biscuit to her mouth. She has no control over her excretory organs. She smiles when she sees food brought to her. She is capable of slight attention. The speech is nil; the voice is harsh and strident.

July.—In the first part of the month alimentation became difficult. The child became thin and gradually cachectic. Nothing by auscultation. Heart-beats, feeble. Lowering of the temperature appreciable to the hand. Fetid sero-purulent discharge from the nose. Diarrhoea and vomiting at intervals. Death from marasmus, July 16th, at 7 a. m.

Autopsy, July 17th.—The child has perceptibly emaciated since the time when we last saw her and photographed her; that is to say, since last May. The fatty tumors, the cheeks and slightly the feet are less voluminous.

Head.—The scalp has become thin; the layer of fat is much reduced. The bones of the skull are thin and hard; the anterior fontanelle persists; it measures 3.5 cm from front to back and 3 cm transversely. (It is known that the mesial anterior fontanelle or the large fontanelle disappears at from two years to two and one-half years.) The sutures are ossified to a great extent, but transparent in certain places. There are numerous adhesions between the arch of the skull and the dura-mater, which it was necessary to tear away. (Similar adhesions have been noted in many cases.) The quantity of cerebro-spinal fluid is normal. The pia-mater shows only a very slight

congestion. The arteries, the nerves, and different parts of the base of the brain are normal.

Brain.—Right hemisphere.—(a) External surface.—The greater part of the convolutions of this hemisphere have left, in places, next to the pia mater, a very slight layer of gray matter. ("La plus grande partie des circonvolutions de cet hémisphère ont laissé, par places, après la pie-mère une très légère couche de substance grise.") The fissure of Sylvius is wide, deep, and shows about a half of the Island of Reil which is formed by five well developed digitations of which two are bifurcated. The fissure of Rolando is deep. "Fasciculus 1" is voluminous, flexuous, anastomosing toward its middle with F. 2, by two folds very close to one another. "Fasciculus 2" is also much developed, very sinuous; it forms a true gyrus in the middle of its course. "Fasciculus 3" is well developed, very flexuous, projects folds into the groove of the second frontal convolution. F. A. is small and anastomoses at its base with the ascending parietal interrupting the fissure of Rolando. The first, second and third parietal convolutions are thin, especially the first; the second was encroached upon by a stroke of the saw which prevents our judging of its condition. The curved fold presents alike convolutions extremely thin in places and then swollen between the strangulations. The occipital lobe is small; the convolutions are compact and quite straight. The temporal convolutions are rather thin; the first sends a thick prolongation to the lobe of the Island. The secondary grooves of the frontal lobes are shallow. Those of the parietal, temporal and occipital are a little deeper. The grooves of the internal surface are also rather superficial.

(b) *Internal surface.*—The convolutions are well developed, save that of the corpus callosum. The paracentral lobe is hollowed out by rather numerous furrows; the calcarine fissure is opened deeply. The cuneus and the quadrate present nothing in particular. It is the same with the convolution of the cornu ammonis and of the hippocampus. The lateral ventricle is not dilated, its surface is smooth; the nuclei appear normal.

Left hemisphere.—(a) Convex surface.—This surface is much less injured by adhesion than the corresponding surface of the opposing hemisphere. The fissure of Sylvius is also very widely opened and uncovers the Island, which is voluminous and composed of seven principal digitations. "Fasciculus 1" is large and rather tortuous. "Fasciculus 2" is very thin and quite straight at its anterior extremity, inserting itself on the ascending frontal by two very slightly marked folds. "Fasciculus 3" is moderately tortuous, thin in front. The ascending frontal is very thick, and is attached at its base to the ascending parietal, closing at its lower extremity the fissure of Rolando, which is deep and well developed. The ascending parietal is equally well marked and presents only a little emaciation in its lower third. The first parietal, rather thin and straight, ends abruptly into the posterior extremity of the fissure of Sylvius. Hence, results a curved depression which is described in the groove of the curved fold. The second parietal is, on the con-

trary very well developed, as is also the third. The curved fold is well formed. The occipital lobe is formed by rather straight convolutions. The adhesions on this surface are especially marked on the first frontal and ascending parietal.

(b) *Internal Surface*.—The first frontal convolution, and the paracentral lobe are well developed up to the calcarine fissure. The convolutions of the occipital lobe present many emaciated points. The convolution of the corpus callosum is much better developed than that of the opposite side. The quadrilateral lobe is large; the cuneus is larger than usual at its central point. The hippocampus and the cornu ammonis offer nothing unusual. The lateral ventricle, the corpus striatum and the optic thalamus appear normal. On this hemisphere the grooves are a little more pronounced than on the right.

The convolutions are not symmetrical, especially the quadrilateral lobe and the cuneus. On the right this last convolution is depressed at its internal extremity and is half as thick as the left.

Cerebellum.—The two lateral lobes are symmetrical; the middle lobe appears small; the protuberance, the bulb, and the olivary bodies are also symmetrical and appear normal.

Neck.—A close examination reveals *no trace of the thyroid gland*. The larynx and the trachea offer nothing in particular. There are masses of yellow, humid, shining fat, and numerous ganglia from 5 to 10 mm long on the sides of the neck, especially the left. The same condition in the arm-pits. The tongue is large, wide and very thick.

Thorax.—No liquid in the pleuræ. Some fragments of the thymus remain. The lungs are sound except a little œdema at the base of the left lung. Several bronchial glands have become entirely caseous. The lungs weigh 225 grammes. Heart, 78 grammes; no super-abundance of fat; no pericardial fluid. Tissue, firm and somewhat pale. Foramen ovale, obliterated. No other lesions.

Abdomen.—The stomach, the intestines, the spleen (40 grammes), the pancreas (35 grammes) present no lesions. The liver (495 grammes) is discolored, yellow, and having a fatty appearance on the cut surfaces; no calculi. The kidneys (97 grammes) decorticate easily; no lobes. The cut surface shows a little anæmia, especially the pyramids. In the right kidney there is a cyst of the size of a small filbert. The bladder, a little distended by urine, has thick walls. The uterus and the appendages are healthy. The weight of the body is scarcely 9500 grammes which is a diminution of more than 600 grammes since the month of May.

Following is the result of the histological examination obtained by our old interne, M. Pilliet:

Histological examination.—Skin of neck, anterior region. The epidermis is thin with a hard horny layer. The papillæ are not so numerous as usual, the sebaceous glands are lacking, and the downy hairs are entirely rudimentary. The sudoriparous coils are little developed. The connective fascia of the derma and the partitions which

circumscribe the sub-cutaneous adipose tissue are nearly normal. The fibrillæ of the connective fascia are only less marked in the places where these fascia are thick, principally about the sudoriparous glands; and the cells at these points are more numerous than in the neighboring region; but nowhere is there the appearance of true mucous tissue such as is found in the umbilical cord; there exist only some small peri-glandular islets. The fat which forms the adipose coils is very abundant and disposed in precisely the same way as is observed in very fat, new-born children. The sub-jacent muscle is divided by rather strong connective arches, rich in elastic fibre.

Skin of the hand.—Same general appearance. The sudoriparous glands are not much developed, as in the case of the new-born and very young subjects. The myxoid appearance of the connective tissue is more marked in the fibrous arches of the sub-cutaneous tissue, especially at their interstitial points.

Liver.—Uniformly fat, like the liver of a fish or of a fattened animal, without any systemization, without sclerose of any nature whatever. The cells are regularly distended by large adipose drops.

Kidney.—It has the regular appearance of the kidney of a child with the renal lobes well marked and the cortical substance very well developed. No undeveloped glomeruli found under the capsule. There are no sclerous lesions, but all the cells of the parenchyma are fatty, and not distended like those of the liver, but infiltrated with fine drops of fat which are deeply colored by tincture of "orcanette" (alkanet?).

Uterus and Ovaries.—As is customary at this age, the uterus contains few smooth fibres; the neck has none. The ovules are scarce in the ovarian stroma. Apart from the scarcity of ovules the appearance and size of the organs resemble those found in young females of two years.

Brain.—Examination was made on a portion of the brain taken from the middle of the right ascending frontal; and on one of the lateral lobes of the cerebellum. The sections show a marked development of the capillaries which are enlarged; the nerve cells are comparatively abundant. The white substance seems strewn with granular bodies, but this appearance is caused by the disintegration of the myelene substance, by its long standing in alcohol. The nervous stroma appears distinctly fibrillary, especially in the most superficial portions. The large pyramidal cells and the medium-sized ones are elongated; many are almost completely fusi-form, but no part shows evidence of pigmentation like that which has been described by M. Fletcher Beach, nor of vacuolization. In the cerebellum the granular layer is extremely rich in cells; the large cells of Purkinje are very numerous, and do not appear altered. In any case they are not pigmented. On the whole it is difficult to estimate the quantitative alterations in the pyramidal cells of the brain of a child so young. As for the qualitative changes they are scarcely noticeable. The lesions of the myelene fibres, in the cortical layer, in the descending fascia of the gray matter, and in the white matter could not be studied because of their long stay in alcohol. Analysis of portions of the skin made by

M. Réquier, chemist in chief of the asylum Villejuif.

ANALYSIS OF 100 GRAMMES.

Water.....	37.483
Ashes.....	0.650
Soluble albumen.....	6.460
Fat and traces of cholesterine.....	44.283
Free acid fat.....	2.200
Licithine.....	1.230
Mucine.....	0.965
Keratine.....	3.694
Substances lost.....	3.255
Total.....	100.000

100 GRAMMES OF DRY SUBSTANCE.

Ashes.....	1.036
Soluble albumen.....	10.297
Fat bodies.....	70.587
Free acid fat.....	3.500
Licithine.....	1.906
Mucine.....	1.548
Keratine.....	5.888
Substances lost.....	5.178
Total.....	100.000

It may be useful to enumerate rapidly the antecedents of this child. On the paternal side we have, in the father himself, general paralysis imminent at the time of conception which took place during alcoholic intoxication and chronic attacks of intermittent fever; apoplexy of the paternal grandfather of the patient; mental alienation of grand-uncle; migraines of maternal uncle; we find some migraines in the mother, and the maternal great-grandmother who succumbed to a cancer of the face; a hemiplegia in the case of the grandmother; insanity in a great-grandfather; finally tuberculosis in the grandfather and a great-grandfather, an uncle and an aunt. On both sides the foundation was bad, and all portended a deficient product.

The phenomena of pachydermical cachexia: The waxy condition of the skin, the thickening of the tongue and of the hands and feet, and the peculiar character of the voice were remarked in the first months of existence: but it was only at eight months, after the convulsions, that the umbilical hernia and the enlarged abdomen were noticed.

NOSOGRAPHIC RÉSUMÉ

Synonyms.—Cretinoid idiocy.—Idiocy with pachydermical cachexia.—Sporadic cretinism.—Cretinoid pachydermy.—Myxœdematous idiocy.

Causes.—Myxœdematous idiocy is due to the congenital absence of the thyroid gland. Sometimes, perhaps, it is also produced by pathological lesions of this gland coming on unexpectedly during the first years of life. What are the circumstances in the antecedents of the parents which are capable of explaining this vice of conformation? We shall try to find this, but without great hope of arriving at an accurate solution.

Unfortunately, the task, already hard in itself, is rendered still more difficult by the absence of sufficient data in the observations of some authors.

Consanguinity has been noticed only once, and in this case it was complicated by alcoholism in the grandmothers of the patient who were sisters. It does not appear in the other twenty-four cases.

The *vivid impressions* experienced by the mother during pregnancy and capable of disturbing the nutrition of the foetus are recorded in only four of our twenty-five observations.

Alcoholism seems to exercise a certain influence. Dr. Fletcher Beach noted it twice out of eight times. Dr. Langdon Down attributes the malady to alcoholic intoxication of one or both of the parents at the time of procreation. We find it mentioned only in three of our observations, and yet in one of these it did not exist in the father and mother, but in the two grandmothers.

Pulmonary tuberculosis appears to play an important part. We met with it in the father, the mother, a sister, and an aunt of the patient of Case X (1st article); in the father of two others (Cases VI and VII above); in the mother of a fourth (Case V of the 1st article); in the grandmother and eight maternal uncles (Case V above); in one great-grandfather, one grandfather, and several maternal uncles or aunts (Case VIII above). *Cancer* is cited in the ancestors of four patients, etc. The of fathers three others (Cases IV, V and VIII above) were affected by *intermittent fever*. We must note also the existence of a *deformed arm* in the father of Pacha (Case VI of the 1st article); also an *elephantiasis* of the leg of the father of another patient (Case IV of the 2nd article). As for *goitre* it is only once mentioned (Case VI of the 1st article), and even that concerns a cousin in the fourth degree. All our patients belong to regions where goitre is not seen in an endemic condition. Finally in the family antecedents of the majority of the myxœdematous idiots about whom we possess rather detailed information we have found neuropathics in large number: lunatics, apoplectics, hysterics, migrainous ones, etc.

Sex and nationality.—Of twenty-five patients whom we have observed, ten belong to the masculine and fifteen to the the feminine sex. Under the head of nationality they are divided thus: 7 English, 1 Belgian, 2 Spanish, 14 French, 1 Swedish.

Prodromes.—Generally speaking, it seems that so long as the lacteal alimentation continues, the symptoms of myxœdema escape the attention of the parents; it may be because they are absent or because they are but slightly pronounced. Often they are perceived only after an eruptive fever, convulsions or traumatism. But, we believe, an experienced eye can detect them in the course of the first year, if not in the first months of life.

Symptoms.—It is a most striking fact that all patients, tainted by myxœdematous idiocy, very closely resemble one another: to see one is to see all of them. This is so, at least up to the present time, in the face of an ensemble of symptoms always the same.

All show an arrest of intellectual development,—idiocy of varying degrees,—an arrested physical development,—dwarfing with profound disturbance of the nutrition.

The *head* is in general large posteriorly, and contracted anteriorly. The forehead is low, narrow and laterally depressed. The anterior fontanelle persists, even in subjects having passed the thirtieth year. The hair is coarse, and heavy, resembling horse-hair, of a brown color, blonde-red, ordinarily abundant, save in front above the temples. The scalp is the seat of an eczematous eruption, which resists the most careful attention. The physiognomy expresses apathy, dullness, and uncomeliness; the profile is still more hideous, because prognathism is more plainly seen. The eye-lids, swollen, pale, bluish, hiding more or less of the ocular globes, are affected with ciliary blepharitis. The nose is always flat, whatever the form of the nose of the parents. The cheeks are swollen, pendent, quivering. The mouth is large; the lips, of which the cutaneous part is bluish, are thick, the lower often everted. The tongue, increased in all its dimensions, almost always protrudes. The teeth, irregularly implanted, are decayed; the second dentition remains incomplete, or only erupt at a very advanced age. The chin is small; sometimes one would say that it had been flattened up to the edge of the lower lip. The ears do not exhibit to us any deformity, but they are thickened, of a waxy pallor, of oedematous appearance, without, however, preserving the imprint of a finger when compressed, as likewise the eyelids and hands.

The *neck* is thick and short, and the head appears as if buried between the shoulders. The most thorough examination made upon the living person does not disclose the thyroid gland. Pseudo-lipomatous masses, not well-defined, strewn with ganglia, slightly hypertrophied, show themselves constantly in the supra-clavicular spaces, in the armpits, and sometimes in other regions.

The *thorax* generally shows deformities occurring at the lower ribs, which deviate outward, and the spinal column is more or less curved; the back is arched.

The *belly*, very large, very broad, brings to mind the belly of batrachians. Hernias almost always exist, either umbilical or inguinal. The pelvis is contracted.

The *genital organs* are in most cases, if not in all, arrested in their development. The testicles appear to descend tardily, and remain small. The labia majora and the nymphæ never reach the normal dimensions.

The *upper and lower limbs* are thick and short, and show usually rachitic curvatures. The articulations are sometimes nodular. The hands and feet are often cyanosed, stubby, thick, presenting in a word the pachydermical appearance.

The *skin*, without down, white, dry, wrinkled, scaly in places, is without exception the seat of a rather extended eczematous eruption; on the face it is a little yellowish, waxy, analogous to a certain degree to that of cachectics.

Digestion is normal. Any digestive disturbance, if constant, is slight. Appetite is very moderate; often these patients have a repugnance for meat. Mastication is insufficient; stools are infrequent; constipation is habitual and hence frequent hemorrhoids.

Respiration in many myxœdematous idiots is obstructed. They easily lose their breath. The odor of the breath is disagreeable. The pulse is small, frequent. The extremities and the lips are cyanotic. The central temperature is below normal, whence a lively sensitiveness to cold.

The *urinary secretion and micturition* appeared to us normal. The sudorific secretion on the contrary always appeared imperfect. Never have we seen our patients sweat, even at the time of greatest heat. All have hoarse, sharp and shrill voices which are to a certain degree pathognomonic. The gait is unwieldy, accompanied with a lateral swing of the jogging sort. They have the greatest repugnance for movement.

Puberty never comes. The beard is always wanting; there is no hair in the axilla, or on the mons veneris. At most a tuft of a few hairs is found on the majora labia or at the base of the penis. The menses do not appear or are suspended after appearing once or twice. The breasts remain absolutely rudimentary or are only slightly enlarged. The sexual appetite is nil; onanism so common among ordinary idiots has not been noticed in any of these patients.

General sensibility is normal. The same appears to be true of special sensibility, so far at least as the intellectual state of the patients permits us to judge. Speech is generally very limited; one only of our cases speaks fluently.

Under the head of intelligence all these patients can be classed as idiots. One only could be placed among imbeciles. In none of them, however, have we observed the characteristics of profound idiocy, such as are found, for example, in meningeal idiocy, in sclérosis or in congenitally arrested development of the brain. They do not have tics, they do not make grimaces, do not sway, do not grind the teeth, do not utter cries, have no salacity. They are capable of attention, they have memory to a certain degree, they become tidy and neat, learn to feed themselves without much aid, and to dress and wash themselves. Their disposition is mild; they appear susceptible of affection.

INTERCURRENT MALADIES.

Convulsions, erysipelas, bronchitis, hemorrhoids, and falling of the rectum should be mentioned. Other affections which often show themselves among myxœdematous idiots, constitute, to our mind, symptoms rather than complications; such are scrofulous or lymphatic manifestations (impetigo, eczema, blepharitis, keratitis, etc.), rachitic deformities, inguinal and especially umbilical hernias.

TERMINAL MALADIES.

The patients from whom we collected these observations died: two from erysipelas, complicated with other affections; two from convul-

sions; four from pulmonary congestions, with or without bronchitis; one from pericarditis; one from interstitial nephritis; two from marasmus ("?").

PATHOLOGICAL ANATOMY AND PHYSIOLOGY.

According to our opinion the controlling factor in all these cases is the *absence of the thyroid gland*. It is to this that we attribute, not only idiocy, but even the modification of the voice, scrofulous manifestations, rachitic deformities, the persistence of the anterior fontanelle, dwarfing, etc. Whence follows the fact that the thyroid gland exercises a very important action on the nutrition in general, and particularly on that of the brain, whose convolutions have a gelatinous form, recalling that of the brain of the new-born. This defect in the function of the thyroid gland shows itself in the osseous system by the persistence of the anterior fontanelle; by dwarfing and rachitic deformities (spine, thorax, limbs). The disturbance of the skin and the cellulose-adipose tissue manifests itself through divers eruptions, a singular discoloration, a relaxation of the umbilical and inguinal rings, a diminution of the sudorific function, a state of peculiar laxness and a hypertrophy of the adipose tissue especially in certain regions.

The chief rôle which we attribute to the absence of the thyroid gland finds verification in the autopsies of adults, affected with pachydermical cachexia; with serious lesions of the thyroid gland; and in the appearance of all the symptoms of pachydermical cachexia in subjects on whom complete thyroidectomy has been performed. If in myxœdema of adults and complete thyroidectomy we do not observe physical and intellectual symptoms so well marked as those offered by myxœdematous idiots, it is because the pathological lesion or the surgical operations occur at a time when the body is developed, and when the cerebral convolutions have attained their normal volume and regular conformation.

Finally, physiology confirms our opinion in showing a pachydermical cachexia in monkeys whose thyroid gland has been removed (experiments of Horsely) as well as the absence of this disease in animals upon which thyroidectomy has been practised, and a thyroid gland taken from the sheep has been grafted under the peritoneum (experiments of Schiff).

In résumé, the facts furnished by the medical and surgical clinics, as also the experiments of physiologists, appear to confirm the pathogenesis which we have given to myxœdematous idiocy.

DIAGNOSIS.

Idiocy is easily recognized and cannot be confounded with any other affection. The observations which we have gathered, and the nosographic résumé which we have drawn from them, show how myxœdematous differs from other forms of idiocy; the presence in these patients, and the absence in others of symptoms which characterize pachydermical cachexia render the task most easy.

But difficulties do arise in distinguishing myxœdematous idiots from cretins. Personally we have had no experience on this point. Our visits to the asylum of Saint-Robert near Grenoble, and the asylum of Bassens near Chambéry were without results. If we met idiots and imbeciles there, we did not find true cretins. We are then obliged to rely upon the description by writers, and first of all we are led to declare that we lack the most indispensable facts. In truth, the authors themselves are far from understanding what should be understood by cretinism, and according to a remark of one of the savants, who has made the best study of cretinism, M. Baillarger; "l'examen microscopique paraît encore entièrement à refaire".

Most authors regard cretinism as a variety of idiocy (Pinal, Fodere, Esquirol, Georget, Roesch, Massei, Stahl, etc.). Others like Guggenbuhl, Seguin, Ferrus, etc., regard cretinism as a disease quite different from idiocy. "From a pathological point of view," writes Ferrus, "cretins are so distinct from the idiots which are found among healthy people, that it is necessary to draw between them a sharp line of demarcation, and that it would be impossible to mingle them in a strictly scientific classification". According to him the principal difference consists in this, that "there develops in the case of cretins a diathesis, a cachexia, an abnormal state of the constitution, in which the whole economy participates; a diathesis which presents so determined a character, and features so peculiar, that in order to reach and fix the reality it is necessary to call it cretinous".

Cretins descend always from goitrous persons. "The great majority of them have very voluminous goitres, which sometimes are congenital, and sometimes are developed later in life, and which in general become very much enlarged at the period of puberty. It is very rare that one does not find a trace of it then". Myxœdematous idiots never come from goitrous descent, so far as we know; they do not have a thyroid gland and therefore never the goitre.

"Very few cretins, according to the Sard Commission, exhibit degeneration of the bony tissues like that which occurs in rachitis." This degeneration on the contrary seems frequent in the case of myxœdematous idiots.

Cretinism, according to Ferrus, affects the entire economy. M. Baillarger expresses the same idea when he says that the arrest of development is seen simultaneously in the brain and in the whole organism. Idiocy on the contrary is due to lesions or to an arrested development of the brain. In this respect myxœdematous idiots can be compared with cretins because in these idiots the whole organism is affected. According to Ferrus cretinism can be advantageously modified by change of locality, diet, and habits. These influences do not affect myxœdematous idiocy.

Cretins rarely reach the age of fifty, and only very isolated cases of cretins have reached the age of sixty or over. In this respect myxœdematous idiots resemble cretins; but it is proper to remark that this reduction of the length of life is generally the rule in the case of

all idiots. The vague ideas of pathological anatomy which we possess can be thus summarized: late ossification of the bones of the skull, persistence of the fontanelles;—thick adherent dura mater;—increase of cerebro-spinal fluid, brain asymmetrical;—cerebellum very small, irregular,—asymmetrical;—presence of a goitre, enlarged joints, vertebral column and limbs deviated. In this enumeration, borrowed from M. Baillarger, we find lesions which are equally met with in myxœdematous idiocy; the persistence of the fontanelles, thickening of the dura mater and the rachitic curvature of the spine and the limbs. On the contrary the cerebro-spinal fluid is not increased; the cerebrum is symmetrical; the cerebellum of normal size. We have tried, in the table which follows, to give a comparative résumé of the symptoms of cretinism and of myxœdematous idiocy.

CRETINISM

MYXOEDEMATOUS IDIOCY

Head flattened anteriorly and posteriorly, wide at base, narrow toward the summit, often asymmetrical, whence the appearance of an irregular cone.

(Baillarger). Cretins generally do not present the occipital protuberance (Sard Commission).

Hair, thick, very plentiful, short, almost always of a dirty chestnut. Baldness appears very little in the case of cretins; hair never whitens.

Skin of body and face without hair. Appearance thickset, squat, dumpty, unwieldy, and heavy.

Head bent over the shoulder or breast.

Physiognomy stupid, bestial.

Eyelids œdematous.

Nose, flattened; lips thick; mouth half open; dentition tardy; tongue very large.

Strabismus frequent; insensibility of retina. Ciliary blepharitis.

Ears prominent, and thick.

Lower lip pendent.

Drivelling.

Inferior maxillary projecting beyond superior.

Head long, flattened from forehead to vertex, wide at the base and square, asymmetrical; occipital protuberance shows a development about normal.

Hair coarse, harsh, long, brown or reddish blond, partial baldness.

Appearance thickset, squat,

Head bent.

Physiognomy apathetic, bestial.

False œdema of eyelids, of cheeks and of ears.

No strabismus: retinal sensibility. Ciliary blepharitis.

Ears sometimes prominent, yellowish, false œdema.

Rarely.

None.

Not.

Mastication nil.

No pseudo-lipoma of cheeks, supra-clavicular spaces, or of arm-pits, etc.

No pachydermical cachexia.

Neck very large and very short; goitre.

Thorax deformed.

Breasts small (cretin), large and pendent (semi-cretin).

Abdomen large and distended.

Genital organs rudimentary (cretins); or extremely large size (semi-cretins).

Lower and upper limbs disproportioned, extremely short or very long, impoverished, at points swollen and mal-formed at the joints.

Hands, broad; fingers short and thick; nails rudimentary.

Feet large, flat; toes deformed, overlapping.

Deafness.

Taste depraved.

Smell obtuse.

General sensibility obtuse.

Indifference to temperature.
35° to 36° C. (95° to 96.8° F.).

Voracity very pronounced.

Salacious.

Daily stools or diarrhœa.

Paralysis of excretory organs.

Saliva and tears abundant.

Urinary secretions normal.

Absence of venereal desire, (cretin); exaggerated; onanism; absence of modesty (semi-cretin).

Mastication regular.

Pseudo-lipoma of cheeks, etc.

Pachydermical cachexia.

Neck very large and very short; no goitre.

No breasts or very small.

Abdomen very bulky and large, umbilical hernia, not inguinal.

Genital organs in general atrophied.

No deafness.

Taste normal.

Smell appears normal.

General sensibility preserved.

Lively sensibility to cold.
36.5° to 37° C. (97° to 98.6° F.)

Appetite medium.

Choice of food.

Constipated.

Neat or susceptible of improvement.

Nil.

Urinary secretions not much diminished.

Absence of venereal desire; no onanism; modest.

Rachitic and scrofulous.

Dysentery, gastro-enteritis,
meningitis, hydrocephalus, convul-
sive attacks, especially epilepsy;
cerebral congestion and apoplexy,
tuberculosis and affections of the
heart.

None.

Slow in walking. Semi-paralytic
or paralytic condition.

Gait heavy, movements slow, cap-
able of quite a long walk.

Ignorant of wants.

Conscious of wants.

Sentiments of affection nil.

Preserved.

Memory relatively developed; disposition in general, mild.

Love of solitude; attacks of stupor.

None; none.

Dumbness or very few words.

Vocabulary restricted or quite free.

Voice shows nothing.

Voice harsh, hoarse, strident.

PROGNOSIS

Of the 25 patients whom we have observed, 12 died: 2 at one year of age, 2 at five, 1 at seven, 1 at about twelve, 1 at fifteen, 1 at seventeen, one at twenty four, 1 at thirty-one, 1 at thirty-two, and 1 at thirty-four. It would therefore seem that myxœdematous idiots have generally very short lives. Let us add that their condition is susceptible of material improvement.

TREATMENT

This comprises medical and pedagogical means. Among the first we would cite the use of tonics (iron, quinine,) of anti-scrofulous remedies ("sirop antiscorbutique", "raifort iodé", cod liver oil, etc.), salt baths, hydrotherapy, gymnastics.

As for special pedagogical methods they embrace to some degree all those which we employ in the education of idiots, from the exercises intended to teach a correct carriage and the art of walking to primary and professional instruction.

NEW OBSERVATIONS UPON MYXŒDEMATOUS IDIOCY

(Pachydermical cachexia)

Since the last observations which we published in the *Archives de Neurologie* (1886, vol. XII, p. 137; 1888, vol. XVI, p. 431; 1889, vol. XVII, p. 85;), we have presented to the medical section of *l' Association française pour l' avancement des sciences* (session of Aug. 14, 1889), a paper relative to three cases borrowed from MM. Gimeno, Ernest Holt, and Suckling, and to five other cases studied by us. These eight cases

added to the seventeen which we had previously collected from a total of twenty-five cases; to these we shall add the following which by reason of its strictly typical features, merits the serious attention of our readers.

Case—Father tuberculous (?).—Maternal uncle paralytic, insane and probably subject to epileptic seizures.—Brother and sister died from tuberculosis.—Sister, convulsions in infancy followed by strabismus; died from tuberculosis.—Incomplete information of the antecedents of the patient.—Walked at eighteen months.—Normal in early infancy ("Propre de bonne heure.")—Arrest of development, becoming stout and bloated at three years.—Condition of patient Feb. 1st, 1890.—Scrofulous and rachitic lesions.—Absence of thyroid gland, typical symptoms of myxædematous idiocy: pseudo-lipomata; persistence of anterior fontanelle; umbilical hernia; eczema; arrest of physical and intellectual development; speech, voice, etc.

Debar..... (Jules) born at Ventie (Pas-de-Calais), October 6th, 1865, entered my service at Bicêtre, Feb. 23d, 1890. This patient was sent us by Dr. Moizard, physician at the Hospital Tenon, who had received him in the wards together with his sister, the latter being affected with pleurisy. It was she who furnished our old interne, M. Camescasse, the following information of her family.

Antecedents.—Father, workman in a cloth factory, subject to hemoptysis; tall, strong, dark complexioned, sober, mild disposition, no nervous seizures. He died in 1873 at the age of forty-five years, of a hemorrhage (probably hemoptysis) in two hours. [Father died at about eighty.—Mother, no information.—Two sisters, healthy, as likewise their children (a boy and three girls).]

Mother died in 1877 at forty-four years of age, from a disease of the intestines; a day laborer in the country; sober, subject to headaches. Of medium height, strong, dark complexioned, very mild disposition. [Father and mother no information.—A brother, died at 66 years, was paralyzed. Had a hump in the back following a strain and was bedridden for 12 years, from his 46th to his 58th year; afterward walked until the time of his death. He had melancholy ideas, constantly believed he was going to die; was subject to nervous attacks, with falling, in which he stiffened, writhed, and became stupid. Sometimes he frothed at the mouth. He had married a woman older than himself by twenty-nine years, by whom he had no children. No sister. No other details.]

No consanguinity (father from Pas-de-Calais, mother from Manche). A difference in age of two years.

Five children.—1st, Boy,—tall, strong, intelligent, died at 27 years from an acute pulmonary attack, probably of a tuberculous nature. He had been married and had a child who died at the age of 2 or 3 months.

2nd, Girl,—died at ten years of age, after an illness of two weeks, from fright brought on by seeing her sister fall into the water. She was large and well built for her age.

3d, Girl,—she who furnished us the information—aged thirty-seven years, rather above medium height (1. 70m), rather strong, of regular rather agreeable features. In infancy had convulsions which left a slight strabismus. Typhoid fever at 2 years, at the same time as her father and three of her brothers or sisters. Up to 28 years of age she worked in the fields, then for three months exhibited her brother at fairs. During these peregrinations she contracted rheumatism of the joints for which she was treated at the Lille Hospital. Afterward she worked as a servant in the same town up to 1888, the time when she began again to exhibit her brother at markets and fairs under the title of “King of the Esquimaux”. Toward the middle of January, 1890, she fell ill; at the end of the month she was entered at Tenon, for a pleurisy and tuberculosis of the left lung. She died Feb. 13. (We could have wished for more detailed information, but she appeared to have no parents in Paris, because her body had not been claimed.)

4th, Girl,—died at five years of age from a chill. She was tall, strong, intelligent.

5th, Our patient,—The information which we possess is very vague. He was reared by his mother, walked at 18 months, was normal in infancy, and offered nothing peculiar up to the age of three.

It is said that he talked and played like other children. At three years of age there was an arrest of development, and he became stout and bloated. He eats almost without aid, on the condition that his meat is cut. He has always been subject to constipation, and remains sometimes six weeks without going to stool. He has never been taught to read. His speech is rather limited as we shall see immediately. His sister attributes this to the fact that he knows that he does not pronounce words well. He sews with certain ability. Smokes both pipe and cigarette.

Appearance February, 1890.—The general aspect and physiognomy perfectly resemble those patients whose histories we have published.

Height, 91.5 cm; *Weight*, 24.800 kilogrammes.

Head—Ovoid, with very marked prominence of occipital region, pronounced parietal bosses, and contraction of forehead. Anterior fontanelle not entirely ossified. Depression felt from 2 to 3 cm long and 1 cm wide. Hair brown, shading to red, long, thick, coarse, like horse-hair, abundant at the back and on the parietal surfaces, thin above the frontal bosses, rather thick tufts alternating with spots almost bare. A little to the right of the vertex the hair is thinner. The scalp is the seat of an eczematous eruption. (Yellow crusts, scales.)

Maximum horizontal circumference	36.5 cm
Bi-auricular “	33. “
Root of nose to occipito-atloidian articulation	37. “
Maximum antero-posterior diameter	18.5 “
Bi-auricular “	12. “
Bi-parietal “	13.6 “

Fore-head is straight, rather high (5 cm), but very narrow (9 cm) and depressed laterally; bosses not pronounced, appear equal. Superciliary arches entirely effaced. Eye-brows in the form of s, moderately furnished with short hairs. The eyelids, upper and lower, considerably swollen and of bluish tint; the swelling is such that the eyes are scarcely visible. Pressure of finger leaves no imprint. The separation of the free edge of the lids is 5 cm on the right, and a little less on the left. The lashes are long and rather numerous on the lower lids. There is a slight ciliary blepharitis on both sides. Conjunctivæ healthy; the cornea of both eyes presents a little opacity ("taie"). The irises are blue.

Nose flat, very short and wide (25 mm long and 4 cm wide); the root is flattened; the nostrils are a little raised and triangular.

Malar regions prominent; cheeks voluminous, swollen, given ballotement, lipomatous. Mouth rather wide (5 cm); lips very prominent, which produce marked prognathism. They are bluish, very thick, the lower more than the upper (15 mm), the latter is, besides, a little turned up. The chin, if one may so express it, does not exist; it is flattened as if it had been planed away at the cutaneous edge of the lower lip.

The contour of the face is square: the right half appears a little more developed than the left; but the asymmetry is slight.

Ears pale, quite well-hemmed, with distinct lobes; height 55 mm; width 35 mm, thick, translucent as if infiltrated. It is a case, as usual, of false œdema.

Dental system.—Jaws normally developed; denture irregular, offering a collection of almost all the anomalies.

Upper jaw.—Left side: Central incisor permanent, large and completely erupted. Lateral incisor of ordinary size, deviated by a rotation on its axis from within out, and from back to front, of about 45 degrees. Canine temporary. The bicuspid permanent, normal, with very sharp points. First large molar in course of eruption. A third of the normal height of crown appears outside the gum. Right side.—Central incisor is placed on a plane slightly anterior with respect to the corresponding tooth on the left side; it is large and has reached nearly its normal height; in spite of that, it is entirely covered with distended mucous membrane which permits the tooth to be seen by transparency, as through a membrane of caoutchouc strained almost to the point of breaking. This condition is not accompanied by any pain, spontaneous or provoked. Lateral incisor has undergone a deviation equal and symmetrical with respect to the corresponding tooth on the left side (rotation on its axis of 45 degrees within out and from back to front). Canine temporary.—Two bicuspid as on the left side and no large molar.

Lower jaw.—Anterior teeth very crooked, projecting in front and diverging in fan shape. The four incisors belong to the second dentition; size is normal.—Canines temporary. On the right and on the left after the canines is a wide space. After this wide space, there is

a tubercle with a blunt apex, of a dirty yellow, strongly and deeply eroded, about $\frac{1}{2}$ cm high, of a breadth nearly equal to the neck of a tooth and exhibiting very strikingly the conical form. After this growth a new free space which corresponds to the site of the first large permanent molar. The only large molar found in the lower jaw is situated very much in the rear and occupies the place of the 13-year molar. (It has been impossible, because of the resistance of the patient, to examine the character of the articulating surface of this great molar. This examination, admitting that the conformation of the tooth was normal, would have indicated whether we were dealing with the first or the second permanent molar.)

Articulation.—Inferior prognathism.

The *neck* is extremely short and thick (565mm). In front one can feel very plainly with the finger the cartilages of the larynx and trachea. There does not appear to be a thyroid gland. On both sides of the neck there are quivering lipomatous masses of the size of a hen's egg which do not retain the imprint of the finger, and which flatten by pressure and cause the neck to appear even shorter. One would say that the head was buried in the thorax.

Thorax.—The anterior part is prominent; the sternum making with the vertical an acute angle of about 25 degrees. The sides are prominent; the base of the chest is widened at the false sides which project prominently outward. Posteriorly, the upper part of the thorax forms a very marked convexity, especially of the dorsal region. The vertebral column is sinuous; the dorsal portion forming a much greater convexity than usual, principally at the upper two thirds of the thorax. Below this convexity one notes a very marked lordosis ("ensellure"), moreover, the dorsal column describes a slight convexity to the left.

There are lipomatous masses on the lateral and inferior parts of the trunk as well as in the axillary spaces.

Circumference of thorax at nipples	66.5 cm
“ abdomen at bend of flanks and umbilicus	74. “

The *abdomen* is very voluminous and appears still more in profile. The umbilicus presents a hernia half as large as a filbert; there is no inguinal hernia. The pelvis is very narrow in comparison with the upper part of the trunk. The buttocks are regular, rather firm and do not show lipomatous masses similar to those which are noticed at the neck and arm-pits.

Limbs.—Upper and lower limbs thick, short, equal, stuffy. The hands puffed, thick, have an œdematous appearance; the nails are normal; the legs present a slight concavity on the inside, but more accentuated on the left. The feet have a more pronounced pachydermical appearance than the hands, they are consequently very thick; the toes are proportionately shorter than the fingers. The nails are regular. The planter arch is entirely flattened.

UPPER LIMBS

	Right	Left
Circumference at armpits	24. cm	24. cm
“ “ 10 cm above olecranon	21. “	21. “
“ “ “ below “	19. “	19. “
“ “ the wrist	15. “	15. “
“ “ metacarpal bones	18 “	18. “
Distance from acromion to olecranon	17.5 “	17.5 “
“ “ olecranon to apophysis of ulna	15. “	15. “
“ “ from ulna to extremity of middle finger	13. “	13. “

LOWER LIMBS

Circumference at groin	37. cm	37. cm
“ 5 cm above patella	33. “	33. “
“ at patella	27. “	27. “
“ 6.5 cm below patella	26.5 “	26.5 “
“ at ankle above malleolus	19. “	19. “
“ middle part of foot	20. “	20. “
Distance from iliac spine to bend (“interligne”) of knee	24. “	24. “
“ “ bend of knee to external malleolus	20. “	20. “
“ “ external malleolus to extremity of middle toe	15. “	15. “

Genital organs.—The pubic region (“penil”) is smooth, as well as the face and the armpits, but there are some very short hairs on each side of the root of the penis; the scrotum is small, soft and void in the lower half, the skin is waxy white, and presents some pronounced varicose veins; the testicles, of the dimension of an olive, are equal, and are pushed very easily through the inguinal canal. The penis is 49 mm in length, and 63 mm in circumference. The prepuce is long; its orifice is very narrow, so much so that it is impossible to uncover the gland; moreover micturition is accomplished slowly and intermittently; the patient does not practice onanism.

In a general way the skin is of a waxy white, almost translucent in certain regions, notably about ears, eyelids, edges of lips, and inferior portion of scrotum. It is rather fine and soft to the touch on the posterior regions of the cheeks, on the neck, and on the abdomen. In other regions it is rough and gives to the touch the sensation of ichthyosis; it shows some fine whitish scales notably at lumbar region, at the lower third of the legs, and at the feet. On the surface of the feet the folds are very marked as if the skin had been macerated by prolonged application of poultices. The hands are slightly red but the feet are purple. There is a quite pronounced erythema at the fold of the groin; and there are *nœvi* from 2 to 5 mm on the cheeks, on the the back, and on the right fore-arm, etc.; a cicatrix of vaccination on the left arm, varicosed veins on the convexity of the back. There are numerous small swollen glands on each side of the neck; and under the lipomatous masses of the armpits; there are none in the groin.

Debar—eats without aid but with great slowness; the mastication is rather laborious. The liver and the spleen normal. Stools are infrequent and he often requires a purge. From the effects of constipation hemorrhoids have developed of the size of a small filbert.

D. is very particular about his food; is not voracious; nourishment is very difficult.

Respiration, at 80 (?), is a little constrained and accompanied with a slight nasal snore. The beatings of the heart regular, rather slow and dull; the radial pulse is small, very difficult to feel.

Urine has been examined several times; the density is 1018, the reaction feebly acid; there is no sugar or albumen.

General sensibility is normal. Deb—is very sensitive to cold. The temperature was taken from 12th to 21st. Here are the figures:

	MORNING			EVENING	
	Degrees	Centigrade		Degrees	Centigrade
February 12th	37.5	37.1	February 17th	37	37.4
“ 13th	37.4	37.2	“ 18th	37.2	37
“ 14th	37.5	37.8	“ 19th	37.2	37.4
“ 15th	37.6	37.4	“ 20th	37.2	37.5
“ 16th	37.2	37.4	“ 21st	37	37.3

Hearing, smell and taste are normal. Sight appears good in spite of the blemishes which we have noticed.

The walk is very heavy and accompanied by a slight lateral rocking. The feet are lifted with difficulty from the ground. Debar—is incapable of ascending or descending the stairs alone. The sleep is peaceable.

The voice is sharp, hoarse and strident.

The speech is very slow; the vocabulary appears limited. D. does not make whole sentences; he pronounces words of one and two syllables quite well, he does not repeat sentences but only the last word. When one says to him: “Dress me”, he repeats only “me”; he can say “oui, non, merci, tabac, cigaillette (pour cigarette), almête (pour allumette); pain, vin, nez, cayon (pour crayon), bague.” When asked: “Do you like cigarettes?”, he answers, “Oui, mochieu—teur” (for “docteur”). He pronounces frequently only the last syllables: *teuil* for *fauteuil*; *mino* for *domino*; *teille* for *bouteille*; *cuit* for *biscuit*; *ban* for *ruban*; *van* for *savon*: he can pronounce *porte*, *sucre*, *baton*, etc., well.

Intelligence is very slightly developed. In this respect he is on the limit of pronounced imbecility and slight idiocy. He is cleanly, but cannot dress or undress himself, button or lace his clothes; he cannot be made to unbutton his suspenders; nevertheless, as we have already said, he sews well, can hem half a handkerchief in a day and his stitches are regular. He never assists himself in his toilet. He knows the names of most of the objects around him. He does not recognize any letter but can make on his slate an *n*, *o*, *u*, and some figures. He can distinguish between red, blue, white and black.

If given something which pleases him, for example, a cigarette, he smiles; when asked he smilingly makes a curtesy. His hideous features express ordinarily indifference, even stupidity. The ugliness seems even greater when seen in profile which recalls the snout of a pig. D—remains the whole day seated on a chair before the fire, never asking anyone to walk with him. Sometimes he begs for some tobacco and indicates by signs that he wishes his pipe filled. However his desire for tobacco has moderated. When questioned as to what he did before he entered the hospital he made an impatient

movement, shrugged his shoulders, and turned his back.

From time to time he notes what is going on about him, but more frequently he pays no attention. His attention is easily fixed; he appears rather affectionate. He has chosen another child as a comrade and does not like to have the other children come around him. As soon as he is dressed he takes a chair and slides it near the fire, then takes another, which he places before him, and on which he puts his slate and pipe.

REFLECTIONS

I. The very incomplete information which we possess of the family and the personal antecedents of the patient, does not enlighten us as to the cause. Only let us remember the existence of tuberculosis in the father, a brother, and a sister.

II. In this case, as in some others, the first symptoms of pachydermical cachexia, due to the congenital absence of the thyroid gland, were noted at three years of age; before, the child seems to have had a normal development. Perhaps it will be possible to deduce that the appearance of pachydermical cachexia is retarded by lacteal alimentation, and that it manifests itself in proportion as the child is submitted to ordinary alimentation.

Only a precise knowledge of the physiological action of the thyroid gland is capable of deciding the question.

III. We believe it superfluous to take up again each of the symptoms of myxœdema. They are all met with here: general aspect, conformation of the head, state of the scalp, (coarse hair, reddish-brown, eczema, persistence of fontanelle, etc.); swelling and false œdema of the eyelids, of the cheeks, of the hands, feet, etc.; presence of pseudo-lipomata, *absence of the thyroid gland*; exaggerated volume of the abdomen; umbilical hernia; absence of the sexual appetite; clumsy gait, peculiar features, voice hoarse, shrill, disagreeable, constipation stubborn, arrest of development of genital organs, etc.

IV. Also let us especially notice the existence in the case of B, as in the greater number of other patients, scrofulous lesions, and rachitic deformities, shown especially in the vertebral column and the limbs, complications which show how profound is the taint carried to the nutrition by the absence of the thyroid gland.

V. All the myxœdematous idiots which we have observed present the same heavy, stupid, expressionless physiognomy. These are not complete idiots. Speech, always more or less imperfect, exists in various degrees. It is the same with memory. The attention also may be fixed. Comprehension is slow but not absent. These patients are susceptible moreover of a certain education: all become neat, may be taught to eat without aid, and some even to wash and dress themselves: to sew (ie; Graf.—Debar—), to aid in housekeeping. None of these present *tics*, so frequent and so numerous as in the case of idiots from meningitis, sclerosis, arrest of development of convulsion, etc.

VI. The treatment which we have instituted, from a pedagog-

gical point of view, consists in the application of special educational methods for backward children; and from a medical point of view, in tonics, anti-scorfulous medicines, salt-baths, douches, and gymnastic exercises.

Following our communication to the *Association française pour l'avancement des sciences*, we received August 15th from Dr. Arnaud of Saint-Gilles who had been present at the session, a letter in which he submitted a particular mode of treatment, which it is well to relate: "M. Brown-Sequard thinks, not without reason perhaps, that the glands or at least some of them have an action, which is as yet unknown, upon nutrition, through certain principles which they deposit incessantly in the circulation. Might it not be the same with the thyroid body? By that means one could easily explain the cachexia following the absence of the thyroid gland. Furthermore this theory could lead us to a rational treatment of pachydermical cachexia; treatment by subcutaneous injections; or, perhaps by intestinal absorption, of certain principles borrowed from the thyroid gland".

We have not been able to try this mode of treatment, having no other in our care before the admission of Debar—but a myxœdematous imbecile Gra—aged 33 years. This method will perhaps be tried. We may state in this connection that according to Schiff the peritoneal engraftment of the thyroid gland produced in dogs an almost complete immunity from the effects of thyroidectomy. These experiments were repeated quite recently by MM. Anton von Eiselsberg and Horsely. Hence results quite a new mode of treatment for experimentation, but one which we think is preferable in case of quite young patients.



SELECTED ARTICLES

SPEECH AS A FACTOR IN THE DIAGNOSIS AND PROGNOSIS OF BACKWARDNESS IN CHILDREN.

G. HUDSON MAKUEN, M. D., PHILADELPHIA.

THE subject under discussion is one of more than usual importance. It is said that there are, in Philadelphia alone, more than twelve hundred school children who are unable to keep up with their classes and for whom no adequate provision has been made. This large number does not include the high-grade imbeciles and idiots who never get into the schools, but only those who are said to be "backward in their studies."

Scientific discussions often fail to be of value because of a lack of

a definite and uniform nomenclature, and therefore it may be well to come to some understanding as to exactly what we mean by the term "backwardness in children." No two children are of exactly the same grade, mentally, but they differ in this respect as they differ in respect to physical characteristics. The backward child, according to the common acceptance of the term, is one who is below the average intelligence of children of the same age; and for our present purposes, this is probably the best definition; but a more scientific one would make the term "backward child" mean one who is not living up to his own possibilities or capabilities. This definition, however, is in advance of the times and it will be applicable only when children receive more individual study and training; and when they are not herded together like sheep, regardless of their peculiar characteristics and needs. Moreover, it will be observed that backwardness, in this paper, will be regarded as a disease. This is for the sake of convenience and not because it is in all respects deserving of so much distinction.

The diagnosis of backwardness is not difficult. All children who do not, can not or will not keep up with their classes must be regarded as backward, according to our definition, and they should have our most careful consideration.

The prognosis in these cases is not so simple, for this involves an inquiry into the causes, and some experience in the various methods of special training. We must take into consideration the inherent possibilities of each individual child and determine what his mental capacity and capabilities would be in a suitable environment and under more favorable conditions.

The object of this paper is to consider to what extent a study of the speech of children will aid us in making the diagnosis of backwardness and, more especially, in venturing on a prognosis. It may be said, without fear of contradiction, that freedom of speech is an absolute essential to the normal development of children and that any defect of speech, however slight, must make its impress on the child's mentality and prevent him from doing all that he would otherwise be capable of doing.

Not all children with defective speech, however, are thus prevented from keeping abreast of their fellows in school. Occasionally we find one with sufficient concentration and will-power to succeed, in spite of the handicap which defective speech must entail, but this is the exception and not the rule.

Speech is a tool of the mind and just as the artisan is dependent on good tools for success in his work, so is the child dependent on good speech for the normal development of his mental faculties; and just as a poor tool may be responsible for faulty work, so is defective speech oftentimes the cause of slow development or backwardness in children. Many illustrations of this fact might be given. One or two will be sufficient to emphasize its importance.

In 1895, a young man, 19 years of age, was brought to my office for a prognosis, the diagnosis made by his family physician being im-

becility. He had many symptoms of this disease. He was backward in his studies, so much so that school had to be entirely given up. He could not speak, read or write intelligibly, and he was unable to spell the simplest words. His expression was vacant and staring. His lower jaw was receding and his mouth open. He was exceedingly awkward in his movements and unable to express himself in any language. His speech was wholly unintelligible. He could not give his name or his residence, and he was unable to make the conductor of the railway train understand at which station he wished to get off.

The prognosis in this case could not be made off-hand. It was of the utmost importance, because on it depended the treatment and the patient's future usefulness. After careful investigation, it was discovered that one great barrier in the way of mental development was the lack of power of expression and it was manifest that until the faculty of speech could be established the man could never become a useful citizen. On the other hand, it was assumed that if the faculty of speech could be acquired, the mere effort necessary to its acquisition would serve to develop some degree of mental power. The question therefore arose as to what was the cause of the tardy development of speech. On examination it was found that the patient had a defective tongue. The genio-hyoglossus muscle was too short and bound the tongue down to the floor of the mouth and thus prevented its normal action in the processes of articulation. A simple operation was performed, which consisted in a division of some of the anterior fibers of this muscle, thereby giving a free tip to the tongue. The operation was followed by a systematic course of training for the purpose of teaching the use of the tongue and the related organs in processes of speech. A little more than a year sufficed to accomplish this result; and the boy who, up to 19 years of age, was supposed to be an imbecile, is now one of the most successful real estate brokers in Philadelphia.

This case is illustrative of a large class of children who are backward not because of any organic mental deficiency, but because they are lacking in the power of an easy and natural expression of their thoughts.

Another case was that of a lad brought to my clinic at the age of 15 because his speech was unintelligible and he was backward in his studies. Unlike the former case, however, he was able to make some progress in certain lines of school work and presented an appearance of one having greater intelligence. He had a distinct vocabulary of sounds of his own unlike any I have ever heard and it was by no means limited. He could talk and read fluently, but it was all a meaningless jumble to everyone but himself and he claimed that the substitutes he used sounded to him the same as the actual words spoken by his tellows. In other words, his ear did not discriminate between his own jargon and the normal speech of other people. He was not a robust boy. In early childhood he had some organic heart affection. He was a "blue" baby, had spasms and some difficulty in respiration. He also had web fingers on both hands, indicating arrested prenatal development.

This boy was backward merely because he could not speak intelligibly; because he was unable to command that important tool of the intellect, language. A few years of speech training, however, resulted in a complete change in his mental and physical processes and he is now holding an important office position in one of the departments of the University of Pennsylvania.

Many other similarly interesting cases have come under my observation, but the above two will suffice to illustrate the importance of speech as a factor in the diagnosis and prognosis of backwardness in children, and from the history of their cases we may draw the following conclusions:

1. It is not always possible to determine at a glance the cause of backwardness in children.

2. Backwardness in children is not always due to a central lesion, but may be the result of arrested cerebral development due to some abnormality of structure in the peripheral organs.

3. A very common cause of backwardness in children may be some abnormality of structure in the peripheral organs of speech.

4. So closely are the speech centers related to the ideational centers of the brain that any impairment of the one generally results in a corresponding impairment of the other.

5. The best method of arriving at even a proximately correct prognosis in cases of backward children, is to apply the speech-test; or, in other words, to ascertain by careful study and experiment to what extent the faculty of speech may be improved, and it will be found that in those who are susceptible to training in what may be called the refinements of speech, are the ones for whom we may promise the best results, and that possibilities for general development will be proportional to the capacity for speech development.



CONCERNING RECENT LEGISLATION.

DR. J. C. CARSON, Syracuse, N. Y., says that more than fifty years have elapsed since New York and Massachusetts began the training and education of the feeble-minded; Massachusetts, in 1848, by a small appropriation for the support and education of a few feeble-minded children at the school for the blind, and New York, in 1851 (ch. 502), by the establishment of the New York state asylum for idiots, more recently named the Syracuse state institution for feeble minded children ('91 ch. 51). Following the lead of New York and Massachusetts, about twenty other states have in some manner provided for their feeble-minded.

During all this period New Hampshire has made no provision for the feeble-minded, except for a few annually at the State school for feeble-minded in Massachusetts. In 1901, however, a decided step for-

ward was taken in New Hampshire by an act ('01 ch. 102) providing for the establishment and maintenance of a school for the care and education of the idiotic and feeble-minded. This act creates a board of five trustees, one of whom shall be a woman; the governor, who is required to visit and inspect the school annually, is made a trustee *ex officio*. The law appropriates \$30,000 for the purpose of purchasing a suitable site for the school and for erecting thereon appropriate buildings. To this school only feeble-minded children between three and twenty-one years shall be admitted. No provision seems to have been made in the law for the care and maintenance of custodial cases. This feature is further emphasized by the fact that pupils are not to be retained after reaching the age of twenty-one. Pupils may be admitted at either private or public expense; those at public expense are a charge upon the cities or towns where they have a settlement—a rather undesirable feature. The law provides for the discharge of a pupil by the vote of three of the trustees, or by a justice of the Superior or Supreme Court, whenever further detention at the school is thought unnecessary but strangely, "any person so discharged who is under sentence of imprisonment at the time of his committment, the period of which shall not have expired, shall be remanded to prison." But why should a feeble-minded child be under sentence of imprisonment; and if feeble-minded, why should he be remanded to prison? Evidently the institution created is to be distinctively of an educational character. While the act does not go very far in providing for the feeble-minded, and makes no apparent attempt at relieving the county almshouses and asylums of their adult or custodial cases, yet it is a step in the right direction and must ultimately lead to a better and broader policy.

In New Jersey, an act was passed in 1901 (ch. 94) "to establish a village for epileptics." This law repeals previous laws ('99 ch. 152; '00 ch. 129) in relation to the village and is practically a revision. A board of managers arranged on a non-partisan basis is wisely provided. The system of maintenance is on the mixed plan, one-third of the expense devolving upon the state and two-thirds upon the counties. By this system the counties must retain a local interest in their patients at the village. The New Jersey law differs advantageously from the New York law in that patients appear to be admitted to the village irrespective of class distinctions; the well-to-do and middle classes are not pushed aside to favor the pauper and indigent. The ban of indigency should not necessarily be required of the former classes in order that admission may be gained to institutions provided by the state. The law also provides for the judicial committment of indigent epileptics and empowers the managers to hold and detain any patient so committed, if thought desirable. This seems to be quite an important provision of the law. In what way the village plan differs from the colony plan does not appear. Presumably, however, the acreage plan is to be less extensive and the buildings more concentrated.

The state of North Dakota has a constitutional provision providing for the establishment of an institution for the feeble-minded in

connection with the hospital for the insane at Jamestown. The legislature of 1901 passed a resolution to amend the constitution for the purpose of locating an institution for feeble-minded at Grafton. This resolution must be referred to the next legislature, and, upon approval, then to the people at the next election, for adoption or rejection. Presupposing its adoption by the people, an act ('01 ch. 36) also passed the legislature authorizing the governor to appoint a board of trustees to procure plans and erect buildings for an institution for feeble-minded at Grafton. The purpose seems to be to remove the feeble-minded from the hospital for the insane. There being little in common in the care and treatment of the two classes except their custody, the movement undertaken in this state for the feeble-minded is certainly commendable.

In Indiana the law ('89 ch. 73) regarding admissions to the institution for the feeble-minded placed the age limit at sixteen at the time of application. In 1901 this law was amended ('01 ch. 96), extending the age limit in the case of women to forty-five. This amendment also appropriates \$40,000 to provide permanent custodial care for all feeble-minded female imbeciles in the state under the child-bearing age. The purpose of the law is in the line of prevention of feeble-mindedness and a more worthy one could not have been enacted.

—*New York State Library Bulletin 72.*



"We have discovered of late that God ploughs and harrows His fields with earth-worms and puts the burden of His creation on beasts that can swarm through the eye of the needle. Awake to the significance of the insignificant; for you are in a world that belongs, not alone to the God of the Infinite, but to the God of the Infinitesimal."

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PROCEEDINGS OF THE TWENTY-SIXTH SESSION OF THE ASSOCIATION OF MEDICAL OFFICERS OF AMERICAN INSTITUTIONS FOR IDIOTIC AND FEEBLE- MINDED PERSONS.

FORT WAYNE, IND., MAY 26-27, 1902.

The session was called to order at 10:30 A. M. by the president, F. W. Keating, M. D., of Owings Mill's, Md. There were present Doctors F. W. Keating, M. W. Barr, W. E. Fernald, A. W. Wilmarth, W. N. Bullard, W. A. Polglase, C. B. Simcoe; Messrs Alexander Johnson, F. R. Johnstone; Mesdames Barrows, Johnson, Fernald, Polglase; Misses Mattie Gundry, Wright and teachers of the Indiana school.

It was voted to dispense with the reading of the minutes of the last meeting. The following persons were elected new members:— W. M. Lawlor, California, presented by the secretary, active; J. K.

Kutnewsky, Redfield, North Dakota, presented by the secretary, active; Archibald R. Douglas, Royal Albert Asylum, Lancaster, England, presented by Dr. Barr, honorary; Charles W. Wilson, Vineland, New Jersey, presented by Mr. Johnstone, active.

On motion it was voted that the minutes of the New York meeting should be corrected so as to include the names of two ladies elected at that time, accidentally omitted from the record:—Mrs. M. C. Dunphy, New York, and Mrs. Sophia A. Doolittle.

The secretary reported the resignation of Dr. Fitzgerald, of Rome, New York, from inability to attend the meetings.

The Committee on the Etiology of Idiocy, Dr. Fernald, chairman, was called on to report, but asked for extension of time.

The Committee appointed to consider the work undertaken by Dr. McDonald made the following report:—

To the Association of Medical Officers:

Your committee to whom was referred the request of Mr. Arthur McDonald for an endorsement of his proposition to conduct a National Bureau for the Study of Abnormal Man respectfully report

That in the opinion of the Committee it is not desirable at the present time for this Association, as an Association, to take any action of the kind requested.

Signed,

ALEXANDER JOHNSON, } Committee.
FRANK W. KEATING, }

The secretary read a greeting from Dr. A. B. Beaton, of Orillia, Canada, and Hon. W. P. Letchworth. Letters expressing regrets for inability to be present were read from Dr. J. C. Carson, Dr. G. A. Doren, Dr. J. R. Barnett, Dr. G. H. Knight, Dr. W. P. Sprattling, Dr. J. M. Taylor, Dr. J. M. Murdoch, Dr. J. P. Stewart, A. R. T. Wylie; Mesdames E. Seguin, M. C. Dunphy and Miss Jean W. Cox.

On motion a vote of thanks to the program committee was passed unanimously.

The address of the president, Dr. F. W. Keating, was read.

A paper entitled "Contributions to the Etiology of Idiocy and Imbecility," was read by W. N. Bullard, M. D., of Boston, Mass.

Dr. Fernald gave an interesting address on the Massachusetts Farm Colony for Feeble-Minded in lieu of a formal paper, which was followed by Discussion.

SECOND SESSION.—3:00 P. M.

The second session was called to order by the president and the following committees were named:—

Committees on Nominations:—Messrs Barr, Fernald, and Miss Gundry.

Committee on Time and Place:—Messrs Polglase, Johnstone and Rogers.

Committee on Program:—Messrs Johnson, Lawlor and Bullard.

The following persons were elected new members:—Dr. C. H. Henninger, Polk, Pa., Miss Fanny Compton, St. Louis, Mo., Dr. Katharine Johnson, Ft. Wayne, Ind., and they were given seats in the meeting.

A report of a Case of Hydrocephalous, observed by Dr. W. G. Spiller, Philadelphia, was read in his absence by Dr. Wilmarth.

A paper on "The Eyes of the Feeble-Minded", by J. Thorington, M. D., Philadelphia, was read in his absence by Dr. Polglase.

A paper entitled "Training a Special Sense," by Miss Alice Morrison, Vineland, N. J., was read in her absence by Mr. Johnstone.

A paper on "The Imperative Call of Our Present to Our Future," was read by M. W. Barr, M. D., Elwyn, Pa.

A paper on "The Family History of Five Microcephalic Children," by J. Moorhead Murdoch, Polk, Pa., was read in his absence by Dr. Henninger, of Polk, who brought the greetings of Dr. Murdoch and his regrets for his inability to attend the meeting.

Dr. Henninger also read a paper of his own on "A Case of Hysteria."

Adjourned at 5:00 p. m.

The evening was devoted to the production of an English operetta, "Columbus," by the pupils of the school, one hundred and four of whom were on the stage at one time. The presentation was excellent both in action and music, and reflected great credit on Supt. Johnson and his corps of teachers.

THIRD SESSION.

TUESDAY MORNING, MAY 27TH.

The Association was called to order at 10:30 by the president, after a tour of the institution. The report of the committee appointed to prepare a statistical blank was the first business, Dr. Fernald, chairman.

Dr. Fernald. Our committee would recommend as a scheme for investigation the following plan:—

SCHEME FOR ETIOLOGICAL STUDY.

(a) BEFORE LABOR.

1. Heredity.
2. Health of parents { (a) Syphilis.
(b) Tuberculosis.
3. Alcohol.
4. Health and condition of father at the time of conception.

5. Injury to mother during pregnancy.
6. Worry, anxiety and grief to mother during pregnancy.
7. Uterine or placental disease.
8. Imperfected cerebral development—origin undetected.
9. Sporadic cretinism.

(b) DURING LABOR—Trauma.

1. Instrumental.
2. Non-instrumental.

(c) AFTER LABOR.

1. Trauma.
2. Disease.

The committee would recommend that a little further consideration be given to working out the details, but that the blank form be made in accordance with these suggestions.

Dr. Rogers. If the committee will prepare a slip we will have it printed.

On motion it was voted that the partial report be accepted and the committee continued.

Mr. Johnson said that he would like to have a paper at the next annual session embodying the results of the investigation made during the year.

Dr. Bullard. The idea of the committee is to print a copy of this slip or chart, as soon as possible, within two or three weeks, making some slight modifications of the chart which I have presented. As soon as that is printed a circular would be printed to go with it, stating the use of the chart. These will then be sent to every institution belonging to this Association and each one will be requested to take up such cases as it can. The statistics thus collected should be sent by some definite date to the chairman of the committee who will make a report upon it at the next session.

It was voted that this should be the plan adopted.

The Chair. The committee will be glad to receive facts and statistics from any private institution.

An address on "The Value of Public Exhibitions as a means of Education," was made by Mr. A. Johnson, Superintendent of the School for Feeble-Minded, Ft. Wayne, Ind.

The next paper was by Dr. W. E. Fernald on "Feeble-Minded Children in the Public Schools."

A paper by Miss Mary Blackwell Sterling, Orange, N. J., "Out of School Hours With a Group of Children of Arrested Mental Development," was read by title.

Adjourned at 10. P. M.

FOURTH SESSION

TUESDAY NIGHT, MAY 27TH.

The Association was called to order by the president at 8 P. M. A letter of regret was read from Dr. Geo. Brown of Massachusetts, also a note from Dr. Powell of Iowa.

The Committee on Nominations reported, and on motion it was voted that the report be accepted and the secretary instructed to cast one ballot for all the persons named. This was done and the following named persons were declared elected:

Dr. J. Moorhead Murdoch, president; Mr. E. R. Johnstone, vice president.

The following officers were re-elected on motion:—

Dr. A. C. Rogers, secretary and treasurer; Mrs. Isabel C. Barrows, official stenographer; Dr. A. C. Rogers, editor of the JOURNAL, with the same staff as last year.

The report of the Committee on Time and Place was called for. Dr. Lawlor said that before that report was made he would like to invite the Association to hold its next meeting in California, assuring them of a hearty welcome.

Dr. Polglase said for the committee that they had fixed on no place. California and Wisconsin had been mentioned, but as many of the members might like to attend the National Conference of Charities it might be better to decide where the next meeting of the Association should be held after it was known where the Conference of Charities would meet next year.

Mr. Johnson thought it important that the work should be kept before the Conference of Charities and Correction, though it was not best to hold the two meetings in the same city.

On motion it was voted to leave the time and place of the next meeting to the officers of the Association.

Dr. Simcoe said that he hoped they would hold the meeting in Missouri.

Dr. Henninger invited the Association to meet in Polk, Pa.

A paper on "Discipline" was read by Mr. E. R. Johnstone, Vine-land, N. J.

A paper was read by Dr. Keating on "Ear, Throat and Nose Symptoms Accompanying Mental Affections".

Other papers were read by title as follows:—

"Report on Pathological Work," O. C. Willhite, M. D., Glenwood, Ia.; "Notes on Case Histories," George Mogridge, M. D., Glenwood, Ia.; "Some Recent Work in Mental Pathology," A. R. T. Wylie, Faribault, Minn.

A paper entitled "A Plea for Expert Psychological Examinations of the Mentally Deficient," by Miss, Margaret Bancroft, of Haddonfield, was read at her request, in her absence, by Mrs. Barrows.

The report of the treasurer was read and accepted, with thanks to the treasurer for his work.

TREASURER'S REPORT, 1900-1901.

CASH DR.

Balance on hand May 18, 1900,.....	\$ 112.66
To Cash Dues 1899,.....	15.00
“ “ “ 1900,.....	80.00
“ “ “ 1901,.....	5.00
“ “ Sale of Journals,.....	144.95
“ “ “ “Mental Affections of Children,” Ireland,.....	4.00
“ “ Advertising,.....	50.00
	<u>\$ 411.61</u>

CASH CR.

1900

June 12, By Express on Cuts for Journal.....	\$.25
“ 15, “ Cuts for Journal.....	3.00
“ 29, “ Stenographic Reports.....	53.00
July 30, “ Postage on March Journals.....	1.90
Aug. 10, “ Envelopes for Journals.....	7.50
“ 17, “ Printing of March Journals.....	52.81
Oct. 30, “ Freight on Stock for Journals.....	.50
“ 31, “ Stock for Journals.....	5.29
Nov. 20, “ Postage on June Journals.....	2.31
“ 30, “ Printing June Journals.....	60.69
Dec. 8, “ Freight and Cartage on Stock for Journals.....	2.10

1901

Jan. 3, By Stock for Journals.....	\$ 43.00
Feb. 4, “ Binding September Journals.....	3.15
“ 4, “ Postage on September Journals.....	2.01
Mar. 8, “ Cuts for Journals.....	3.70
Apr. 25, “ Postage on December Journals, 1900.....	1.70
May, 2, “ Binding “ “ “.....	4.10
“ 10, “ Printing September and December Journals.....	58.92
	<u>\$ 305.93</u>
Balance on hand.....	105.68
	<u>\$ 411.61</u>

SUMMARY.

1900-1901

By Stenographic Reports.....	\$ 53.00
“ Printing Journals.....	172.42
“ Binding Journals.....	7.25
“ Cuts for Journals.....	6.70
“ Stock for Journals.....	48.29
“ Envelopes for Journals.....	7.50
“ Postage, Express, etc.....	10.77
	<u>\$ 305.93</u>
	105.68
	<u>\$ 411.61</u>

Vouchers filed for all expenditures.

Bound Proceedings on hand: Vol. I, sixteen copies.

TO BE COLLECTED.

Due on Journals.....	\$ 81.55
“ “ Proceedings.....	.64
“ “ advertising.....	93.00
“ “ Decennial Volumes Proceedings.....	8.10
	<u>\$ 182.65</u>
Balance on hand May 10, 1901.....	105.68
	<u>\$ 288.33</u>

C. W. Winspear resigned his membership in the Association May 1, 1901.

Respectfully Submitted,

A. C. ROGERS, Treas.

TREASURER'S REPORT, 1901-1902.

CASH DR.

Balance on hand May 10, 1901,.....	\$ 105.68
To Cash Dues, 1897,.....	5.00
“ “ “ 1898,.....	5.00
“ “ “ 1899,.....	10.00
“ “ “ 1900,.....	50.00
“ “ “ 1901,.....	90.00
“ “ Sale of Journals and Proceedings	76.14
“ “ Advertising,.....	28.00
	<u>\$ 369.82</u>

CASH CR.

1901

Aug. 9, By Stenographic Reports.....	23.00
“ 9, “ Binding March Journals.....	4.10
“ 13, “ Postage on March Journals.....	1.24
Oct. 4, “ Stock for Journals.....	2.75
Nov. 14, “ “ “ “	4.13

1902

Jan. 4, “ Cuts for Journals.....	3.45
Apr. 5, “ Postage on June Journals.....	1.44
“ 5, “ Binding June Journal.....	4.50
May 6, “ Cuts for Journals.....	37.80
“ 17, “ Express on Cuts.....	.80
“ 22, “ Postage on Programs for Association.....	.90
“ 23, “ Exchanges on Checks.....	5.24
“ 23, “ Printing March, June and September Journals (1901).....	97.52
“ 23, “ Clerical Work.....	5.00
“ 23, “ Proofreading.....	10.00
	<u>\$ 201.87</u>
Balance on hand.....	167.95
	<u>\$ 369.82</u>

SUMMARY.

CASH CR.

1901-1902

By Stenographic Reports.....	\$ 23.00
“ Binding Journals.....	8.60
“ Stock for Journals.....	6.88
“ Cuts for Journals.....	41.25
“ Printing Journals.....	97.52
“ Proofreading and Clerical Work.....	15.00
“ Exchange, Postage and Express.....	9.62
	<u>\$ 201.87</u>
	167.95
	<u>\$ 369.82</u>

Vouchers filed for all expenditures.

Bound Proceedings on hand: Vol. 1, sixteen copies.

TO BE COLLECTED.

Due on Journals.....	\$ 71.20
“ “ Proceedings.....	8.10
“ “ Advertising.....	95.00
	<u>\$ 174.30</u>

Respectfully Submitted.

A. C. ROGERS, Treas.

Dr. Rogers called attention to the JOURNAL and asked the members to send items of interest for publication.

Dr. Fernald asked if it would not be more satisfactory to publish an annual, like the *Journal of Insanity*.

Dr. Polglase asked if the assistant editors could not have each a special division or department for which each should be responsible.

Dr. Rogers said that that was in line with his own idea on the subject.

Dr. Barr said that he should have to be excused for this year anyway on account of other work.

Reports from States followed.

CALIFORNIA.

By Dr. Lawlor.

My experience is of recent date, but I know that it is the desire of our board of directors to make our institution second to none in the country. My experience here has been of inestimable benefit to me and if I can do anything to advance the cause of the feeble-minded I assure you I shall do so.

At the last legislature there was a bill before it for the construction of a grand executive building with a tower, but there was no appropriation except the usual \$3,250 for salaries and the usual amount for maintenance. We have something like \$25,000 in a reserve fund. We are going to have one of the finest dairies there, for we have good grazing land and good soil. Our legislature meets next January and I feel confident that we shall get an appropriation sufficient to build an administration building and to put up a cottage for epileptics and low grades and also one for girls. We have a fine laundry and kitchen. We are trying to develop the grounds. When I took charge there was not a blade of grass except in front of the superintendent's cottage, but we have planted four or five acres with blue grass seed. We have a landscape gardener who is trying to beautify. Our children look robust and hearty and we have not more than two or three acute cases on our list. We average from fourteen to sixteen deaths in the year. I hope for the sake of the institution that the Association will find it convenient to pay California a visit.

PRIVATE HOME FOR NERVOUS AND BACKWARD CHILDREN, GODFREY, ILL.

By Dr. W. H. C. Smith.

To-day I have reached the summit of my numerical ambition of five years ago, viz, twenty-five children with me with three more arranged for in May. It will strain my capacity, but encourages us to continue and of course my ambition grows to meet conditions—the notch is now at *fifty* mark.

INDIANA

By Mr. Alexander Johnson.

There is nothing new to report except continual expansion. We

have been able to receive the female applicants who were waiting, but we have got to the limit and there are now several women on the waiting list. The session laws of 1901 allow us to receive girls between sixteen and forty-five by commitment as permanent residents. The same Act gave us \$40,000 to carry out this purpose. We have put up a cottage for one hundred and ten and have forty-nine adult females. We have admitted a mother with four children, all feeble-minded. Our numbers continue to increase. We have eight hundred and thirty-three now. As soon as we get the cottage for women finished we shall transfer from one department to another and take in half the waiting list of boys and all the waiting list of girls and women.

IOWA

IOWA INSTITUTION FOR FEEBLE-MINDED CHILDREN, GLENWOOD, IOWA.

By Dr. Powell.

CHANGES IN THE LAW.—A change in the organic law was made by the last general assembly, which goes into effect July 6, 1902. This extends the age limit at which females may be admitted to the institution, from 21 years to 46 years. For many years the management has advocated that the law should be so amended as to admit feeble-minded persons of all ages, but it was not until the last legislature that any enactment was made. The change noted, however, will be a relief to conditions, which can readily be understood, and we have hopes that in the near future the age limit will be entirely removed.

ENROLLMENT.—The present enrollment is 940. Males 516, females 424. This is the largest population the institution has maintained since its organization. There are more than 100 applicants registered for admission, who must wait until increased accommodations shall have been provided. Our growth is continuous, and we can readily forecast that the Glenwood institution will, in the course of a few years, be the largest institution in the state of Iowa.

EPILEPTICS.—About 25 per cent of our inmates are epileptics, for whom there is no special provision in the state. The matter of establishing an epileptic colony has been before several different sessions of legislature, but nothing definite has as yet been accomplished along this line. Public sentiment is positively crystalizing in the direction of a separate colony for this class. The Board of Control of State Institutions in each of their reports have recommended legislation for this purpose.

EQUIPMENT.—The increased enrollment necessarily called for additional buildings and equipment. Chief among these have been an extension to the farm colony cottage, which houses 65 of the older and larger boys, a cottage for the smaller boys, and a new hospital building. The latter is a fireproof structure, two stories and an attic, faced with pressed brick, and contains all modern improvements for a building of this character. The total cost, furnished, has been about \$50,000. We have also installed a cold storage and ice making plant

using the ammonia process.

CURRENT IMPROVEMENTS.—Our legislature, at its more recent sessions, are realizing more fully the necessities of the institution, and manifesting a more liberal sentiment,—the last session appropriating \$109,000 for special purposes. This is now available, and includes \$25,000 for land, \$50,000 for two new cottages for boys, and various sums for minor buildings and improvements. This will be expended during 1902 and 1903.

SCHOOLS.—The schools continue to be recognized as the central point around which the institution life revolves. The present teaching staff numbers 17, and the interest manifested by the institution itself, and also by the general public in this department, is very encouraging. Specialism in the school room is more sought than formerly, with decided benefit to the children.

INDUSTRIAL.—For our older children, the industrial features comprise, for the boys, a printing office, brick making, farming and gardening, shoe making and repairing, wood turning, carpentry and painting. For the girls, plain and fancy sewing, lace making, and general domestic work. We have also organized a tailor shop, in which both boys and girls work. The avenues for employment are not much different than in former times, but it is our continual effort to occupy such as are capable, with some kind of labor, and as the majority of this class are better fitted for gross work, than for finer employment, we have found the avenues mentioned, to be practically sufficient for the exercise of their capabilities.

TRAINING SCHOOL FOR NURSES.—In accordance with the requirement of the Board of Control, the attendants and those immediately connected with the children, are required to take a two years' course in special training. The results have been favorable.

MARYLAND

By Dr. Keating.

Our institution is gradually growing. We have one hundred and four inmates now and expect to increase it to one hundred and seventy-five as soon as maintenance is available in October. Since last October we have had \$35,000 for improvements. For Maryland that is a large amount. The last important legislation was the enactment of a law which gives us the means of obtaining control of the adult imbecile who has been cared for in institutions.

We had a slight fire, but no lives were lost. One cottage was partially destroyed.

MASSACHUSETTS

By Dr. Fernald.

Massachusetts has a bill pending to provide for additional buildings at Waverley, a dormitory for girls and one for boys, increasing our population one hundred and eighty and making an addition to the service plant to correspond. The board has outlined plans for increas-

ing the size up to a thousand or twelve hundred inmates, to be done through a series of years.

MICHIGAN.

By Dr. Polglase.

Since the last report we have opened a cottage for children to contain one hundred. In this building, which is a wing, we were compelled to put both sexes. We have classified as best we could. The appropriation by the last legislature was \$123,000 for support, \$6,000 for an assembly-hall, \$80,000 for buildings and \$4,000 for improvements.

MINNESOTA

A. C. Rogers, M. D.

Board of Control:—The most important event connected with the Minnesota School for Feeble-Minded during the last year, was the inauguration of the Board of Control system in the state. By this arrangement the three Hospitals and two Asylums for the Insane, the School for Feeble-Minded, the Industrial or Reform School, the Reformatory and State Prison, all passed under the complete control of this Board on Aug. 1st, 1901.

The School for Deaf, the Blind, the Indigent Children, the Normal Schools, and in a measure the State University were placed under the power and supervision of the said Board; the original Boards still existing and directing the educational features.

The Board consists of three members having their office in St. Paul, who give their exclusive time to the duties of the Board.

EPILEPTIC COLONY:—Appropriations were obtained from the last regular session of the legislature for the erection of four new cottages, at least three of which will be devoted to the care of epileptics. The two for the boys are erected about one-third of a mile from the Main Building, between that and the farm boys' cottage, each having a capacity for thirty epileptic men, each under the direct management of two attendants who are trained to cook, so that the building is self-contained, but subject to the daily supervision of the central matron and the physicians.

The buildings for epileptic women are located near the pavilion building, Skinner Hall, and connected to the kitchen of the latter by sub-ways, through which food is conveyed to them. Each of these buildings has provision for about sixty women and girls, each under the care of two women.

The question of the fourth building (we already had one building for epileptic men, making at the present time in process of construction or being provided for, two buildings for men and two for women,) is one undecided. Twenty thousand dollars is not enough to construct a building of sufficient size to represent a center for epileptic children, and this might therefore be used for providing room for custodial feeble-minded cases.

HOSPITAL:—An additional wing to our hospital building gives us

now a very complete plant except special provision for tuberculosis cases, which we still desire. We have ample room for sixty beds and building is nicely ventilated by both exhaust and blow fans.

Operating room, lecture room for attendants, bacteriological and psychological laboratories, and photographic room are some of the special features.

SCHOOL, INDUSTRIAL:—We have added nothing of importance in this department since the last report. Our electric tailor shop has developed into great usefulness and the lace industry is growing in importance and interest.

MISSOURI.

By C. B. Simcoe.

We now have ninety patients in our institution, and the demand for admittance far exceeds the accommodations.

The care of this class of patients in this state is new, but I think in a very few years it will be the largest institution in the state.

NEW JERSEY.

By E. R. Johnstone.

The State authorities have taken a little more interest in the work than heretofore. The Training School received an additional appropriation a year ago. It gives no appropriation direct, but pays for the children as long as they are with us \$267 per capita. We have been driving three new wells in place of the old ones which were condemned. We are also making provision for custodial cases. Dr. Dunlap's Institution for Feeble-Minded Women had an increased appropriation for maintenance.

The secretary read a line from Miss Cox, of Haddonfield, saying that they have about thirty-five people to take care of twenty-five children.

NORTH DAKOTA.

By Dr. A. C. Rogers.

An appropriation was made by the general government of No. Dak. some years ago that amounts at the present time to \$30,000 and a small tract of land that the authorities have seen fit to set apart for the school for the feeble-minded. It is near Grafton. By a constitutional provision an institution is to be established in connection with it for a hospital for the insane at Jamestown. The Grafton people are trying to have a constitutional amendment allowing the transfer to Grafton, and obtained the necessary legislation at the last session. A board of trustees has been appointed, an architect selected, and plans completed for a building to cost about \$30,000.

PENNSYLVANIA.

By Dr. M. W. Barr.

We have acquired some more land, so that now we have three hundred and fifty acres; fifty under cultivation, the rest park and pleasure

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JOURNAL OF PSYCHO-ASTHENICS.

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SEPTEMBER, 1902.

No. 1

ORIGINAL ARTICLES.

ON SOME RECENT WORK IN MENTAL PATHOLOGY.

A. R. T. WYLIE, FARIBAULT, MINN.

THE INSTINCT to name things is one of the earliest to appear in childhood, in fact showing itself with the appearance of language. To name a thing is to classify it. As our knowledge grows and our acquaintance with things increases we feel the need of a more exact classification. So the state of classification in a science is an index of the state of that science. And where the classifications are changing most rapidly there we may expect the greatest progress.

In the science which has to do with mental diseases the rise and fall of classifications has been most marked. In fact each author finds it necessary to make one of his own. At first mental diseases were classified according to the most striking symptom as depression, exhilaration, confusion and dementia. But this was soon felt to be unsatisfactory for these conditions are frequently found in the same case. Following the lead of the brilliant results gained in investigations in morbid anatomy in general medicine the same methods were applied to the nervous system. This resulted in great gain for neuro-pathology but the results were not so marked for mental pathology. Here we have to do with two entities, mind and body. We know that a relation exists between them but we can not yet correlate the one with the other so that from a disturbance in the one we cannot infer a particular disturbance in the other. "The same causes produce both somatic and psychic diseases". Consequently we have to approach the subject from a dual point of view. The psychic side is as essential and as constituent part of the mental disease as the somatic and needs to be investigated by as accurate methods.

The efforts of the older psychology in this direction were not very satisfactory owing to the narrow view and limited methods. So it is the prevailing opinion to-day that psychological methods are not useful in this field of investigation. However, great advances have been made in recent years in psychological method and greater accuracy in the observation of mental phenomena has resulted. Yet the application of these methods to psychiatry has been slow chiefly due, no doubt, to the difficulty of the subject and the special adaptation that these methods need for this work as well as to the fact that the attention of investigators in this field was occupied with researches in morbid anatomy.

However the need of more accurate observation of the psychic state has been felt and there have been attempts to adapt psychological methods to **this work**. Of the workers in this field the most noteworthy are Kräpelin, Sommer and Ziehen.

In opposition to the early view that mental disturbances should be grouped according to their emotional differences, Ziehen makes his chief division according to intellectual differences. Thus he divides mental diseases into two groups, those *with* and those *without* intelligence defects.

The instincts and emotions are now regarded by many as the oldest of all our mental states and in many instances hark back to the attributes and activities of our prehistoric ancestors. We know that there are in the brain parts that are vestiges of some prehuman organ, notably the pineal gland, and consequently we would expect psychic states which are vestiges of those of our early forebears. Instances of this are seen in our many strange and often morbid fears. If this is the case then our intellectual states are a later acquisition. And since in mental decay, the things latest acquired are the first to suffer, such defect should be shown primarily in the intellect.

By intelligence defect, Ziehen understands a "diffuse loss of ideas and of the associated connection of ideas". When the defect is in a single sense field we have mental blindness, word deafness, etc., which are better designated by single names. Forgetting he does not regard as an intelligence defect for this latter includes also the loss of ability both to acquire or re-acquire ideas or idea associations. The narrowing of the field of thought in melancholia he calls *denkhemmung* and regards it as resulting from a reproductive inability due to some hinderance and the ideas return when this hinderance is removed. In paranoia the condition is similar to forgetting. Here the associative connection of the ideas is pathologically increased and the normal ideas and sensations can not come in as corrective. In delusions the normal ideas are over-ruled and submerged by the delusive ideas. In stupor the conditions are analogous to melancholia and the split up of personality to *denkhemmung*. So pathological intelligence defect means a diffuse loss of ideas and idea associations and also the inability to re-acquire such ideas and idea associations. These defect psychoses are also characterized by macroscopic or microscopic pathological changes in the brain. The defect psychoses include two classes; the congenital, the feeble-minded, with which we are here particularly concerned, and the acquired or the secondary dementias.

The general pathology of intelligence defects, he finds, is extraordinarily important because it leads to a natural division of mental diseases. And since the purpose of classification is primarily methodological, to bring together materials in such a way as to be suggestive of new problems and consequently to lead to further advances, this point of view ought to be especially fruitful in the study of psycho-asthenic conditions. For here the intellectual defect is most striking and important, and in making such a study we would be simply endeavoring to render more exact what we have known in a general way. And again some practical benefit might be expected since the educational treatment is the only one suitable for such cases.

Ziehen finds that in sensation imbeciles are only slightly deficient. The pain sense is, however, more markedly dulled. The most prominent defects here are shown in cases of amaurotic idiocy and deafness. In general sensations of touch, heat and cold are dulled. His conclusions seem to be the result of general observation. Experimental methods would show more general defects as we have indicated.

But it is in the absence of memory-pictures and ideas (*vorstellung*) that he finds the chief symptoms of intelligence defects.

He begins the investigation of intelligence defects by looking for the presence of simple ideas. Does the child recognize his room, bed, clothes, house, etc. Here one must be careful to distinguish absence of words from absence of recognition. Next, general ideas are looked for as knife, plate, rose, paper, leaf, etc. Particularly useful for comparison here are the articles on the contents of children's minds and word lists of normal children that have appeared in the journals devoted to child study. Most important is it to find out the presence or absence of general ideas of particular sense qualities as red, green, blue; sweet, bitter; hard, soft; warm, cold; light, heavy; etc. For congenital mental defect, Ziehen finds defect in color ideas very characteristic. Sometimes one or two of them may be absent, or only one or two of them may be acquired, or again only the names may be acquired when they will be applied indiscriminately to any of the color tones. Sometimes the ideas are present when the names are not or the ideas may be acquired much later than among normal children.

Hardly less important is the investigation of the general space ideas as right, left, over, under, near, far, high, low, etc., and similarly ideas of time as long, short, minute, hour, day, night, etc.

Next we look for the presence of the ideas of number. Here it is necessary to discriminate between ideas and the mere mechanical repetition of names. We also determine whether the child has the pure optical number idea or are his ideas optical-motor or must he touch the objects in order to determine their number.

The presence of general ideas of a higher order are next investigated as flower, tree, plant, animal, man, etc. Here language is a great source of error.

Then come more complex general ideas as thunder-storm, summer, winter, country, state, people, school, etc.

The determination of ideas of relation is also very important as like,

equal, smaller, later, earlier, cause, etc. Here it is that the higher grades show themselves defective.

And finally we determine the presence of such ideas as ownership, duty, envy, good, bad, etc.

Concerning the association of ideas he determines first the association time, how long it takes for the child to count twenty or if given a word how long it takes for him to recall another one, etc.

More important than the time of association is the error in association. This is shown in mistakes in reckoning, in the stereotyped answers to questions and in the vague and unimportant associations that a word may call up.

The associative value of words for the child is shown by having him fill in omitted words, syllables and letters in a piece of prose, in working such a problem as $10+15=25$, or in answering the question what journey he could take for \$10.00.

According to such a scheme as this Ziehen would investigate the intelligence defects of feeble-minded children, and according to the defects shown he would classify them into three grades of idiocy, imbecility, and mental debility (deblilität).

Idiocy is the lowest grade. Sensation is generally normal. The motor reaction to sense impressions is slow, but this is due to hyposexia not to hypoesthesia. No or very few memory pictures are presented and these quickly disappear. The idiot does not know his clothes, bed, place at the table, or his fellows.

But in the higher grades of idiocy a few memory pictures may be present and these are mostly optical. Speech ideas both motor and sensory are absent except perhaps a few in the higher grades. There is no association of ideas. Attention is frequently absent.

Imbecility is a less severe form of mental defect than idiocy. As a rule there are no disturbances of sensation. The imbecile possesses a large number of memory images. He distinguishes many persons and things and can recognize them after some weeks or months. Most of them distinguish the different pieces of money. Red, yellow, white, and black are known, but not the other colors. He has a large number of sensory and motor speech ideas, but only a few complex and abstract ideas. He knows number usually to ten. Recognition is usually normal, but the power of concentrated attention is lacking, consequently the idea of a definite aim or purpose is wanting. Dream life is little developed. Sentences are limited to concrete ideas as "rose red." Many of them learn to add, a few to subtract but none to multiply.

Mental debility is the highest grade of congenital mental defect. Sensation here is normal. Concrete ideas are present in normal amount and general and complex concrete ideas are largely developed. They show no lack concerning the things of ordinary conversation and are able to answer the ordinary questions of the physician properly. In school they show their lack of ability in different lines of study, but may show particular ability in some one line. They possess abstract ideas in only a small degree. They make use of the words that they hear, but the meaning frequently remains foreign to them. Recognition is normal with them, but continuous attention

or concentration upon one object is deficient. They are uncritical in their judgment, especially concerning abstract ideas. And they do not appreciate the logical weight of objections. In operations that are mechanical they often work rapidly and well. In ethical ideas they are strikingly deficient.

Such is Ziehen's classification as based upon intelligence defects and as characterized by them and as such, it seems to me, to deserve the fullest consideration. And in the investigation of intelligence defects in psychasthenia we have a field for most interesting and valuable research.*



THE IMPERATIVE CALL OF OUR PRESENT TO OUR FUTURE.

BY MARTIN W. BARR, M. D., CHIEF PHYSICIAN OF PENN. TRAINING SCHOOL FOR
FEEBLE-MINDED CHILDREN, ELWYN, PENN.

IN THIS year of 1902 we pass the new century threshold of our work, and looking backward through the maze of time since first Itard led his "Victor" before the world of science, we mark in each decade a continuous advance in all lands; an advance in which America has been by no means a laggard.

Without pausing to review historical detail, in itself a most interesting chapter, it behooves us here in conference to consider what are the urgent demands which the experience of the past coupled with the needs of the present, makes of our future.

While not forgetting that we owe the position of to-day to the struggle of both nations and individuals separated and detached from one another in the past century, let us not fail to accept "Togetherness" as the watchword of the coming century. Indeed, did not the very creation of this association embody such a thought? And surely we have grown in twenty-six years to such maturity as to warrant the propriety of calling to our confreres to come and help us. Numerous communications received from these lead me to consider more and more how in the multitude of counsellors there may be wisdom, and to arrive at the conviction that could we here unite in, and give out to the world, an authoritative statement and opinion as to the paramount needs of our work, we might evoke a similar expression from other countries, and thus materially accelerate a second advance along new lines.

As one by one our institutions become patriarchal, having received successive generations of defectives, we find growing upon the pages of their reports a clearly implied interrogation, "We have trained, for—what?"

Without formal expression emanating from our association as a body there is yet, I believe, a consensus that abandons the hope long cherished of a return of the imbecile to the world.

*Ziehen: *Psychiatrie*. Berlin. 1894.

" *Die Geisteskrankheiten des Kindesalters*. Berlin. 1902.

" *Neuere Arbeiten zur Allgemeine Pathologie des Intelligenzdefekts*. Ergebnisse der Allg. Path. u. Path. Anat. 1897.

Now if this conviction arrived at through long experience and much disappointment involves principles affecting the progress of our work and the welfare of children and of society, ought we to be backward in declaring it? And in failing to do so do we not rather underestimate the value of our association to science and to the world at large? If we do not not speak authoritatively upon the subject, who shall? And how, then, are legislators and others to be enlightened as to the futility of hopes which the very progress of our work has tended to foster? Indeed, I think we need to write it very large, in characters that he who runs may read, to convince the world that by permanent separation only is the imbecile to be safe-guarded from certain deterioration and society from depredation, contamination and increase of a pernicious element.

That men are ready to hear, ready to heed, is evidenced by the repeated calls upon all of us for information and for expert opinion, but the opinion of one man certainly goes farther when sustained and endorsed by his colleagues.

To affirm this, therefore, as a fact touching most intimately the welfare of society, the defective, and our relations toward each, I claim to be our first care and obligation, nor should we neglect any opportunity to urge this result of our experience upon the notice of any and every properly constituted authority.

The establishment by the public school system of special classes for backward children is yet another proof that the time is ripe for concerted action.

Our work—a silent object lesson—has taught the necessity of special methods tested and proven a success, and the educational world is in this simply following our indications.

Already from these classes comes a sifting out, which sends to us a class needing prolonged training, firmer control and regular occupation under insistent supervision; at the same time the pressure for the admission of untrainables is increasing rather than diminishing.

Here is our second call to stand and declare. A training school should not be called upon any longer to accept untrainables.

Our methods, advancing from those adapted only to the improvement and self-help of the idiot, have established industries which provide not only the needed occupation for this new class coming to us, but which may, if properly protected, aid largely in maintenance. But this protection to be effectual should include two vital points; a release from the burden of untrainables, whose care heretofore an object now absorbs much valuable time of both employes and trained pupils, which might bring in a better return, while separate asylums for idiots could be run on a much more economical basis. This on one hand—on the other hand, the industries themselves demand the protection of a certain form of apprenticeship preventing the withdrawal of one set of trained workers until at least another set be ready to carry them forward. Not only for the industry, but for the child is this protection essential. When we consider how large a proportion of children in the primary schools drop out for work before reaching the grammar school, we can readily understand how parents and guardians fail to realize that the

period required for the training of an abnormal is four times that for a normal child; and this ignorance, joined to the pressing necessity of contributing to the support of the family, often withdraws a child who has just entered upon what can prove his life work only after years of persistent compelling force, without which disappointment to the home, to the child and to the work is inevitable.

Various charitable associations are likewise eager to exchange and refill their quota from the many crowding their lists, so that hardly is an industry well started before it suffers from loss of operatives.

As this is an experience common to all, it surely requires consultation, co-operation and united action in formulating and outlining some plan for the common good.

Might not a long apprenticeship coupled with increased privileges upon attaining a certain standard tend to adjust naturally the question of permanent sequestration?

Once settled and interested in his work with a little more freedom than the children of the school, the imbecile is satisfied and contented—a certain self-hood is attained and the institution becomes his home; indeed, we have had many pathetic appeals for return from those withdrawn. Without this there is an ever-ruling spirit of discontent—or may we not better recognize it as a natural longing for the beyond,—different from the *wander lust* in our run-aways? which reveals itself in our trained boys and girls who seek to leave us in a legitimate way to make their own way world.

I presume in this all have the same discouraging experience. The few succeed where carefully placed under the regular surveillance and rule to which they have been accustomed. A young fellow in military service, a young girl as nurse in the hospital are with us notable exceptions in a long list of more than failures, where vice, crime, and marriage or illicit connections fast swell the census roll of abnormality. Still to all of us who are in touch with young life the gratification of this normal yearning becomes a serious and ever present problem:—a problem that is sure to become more perplexing in the future should the supply of trained workers begin to exceed the demands of the institution.

The separation of the sexes is another problem which experience is slowly defining. At Elwyn teachers are a unit in declaring there is nothing gained in co-education, even in convenience, while nerve strain in disciplining is greatly increased, and a re-arrangement of classes according to sex rather than grade is already deemed advisable.

From the fact that such separation has become a necessity in school, custodial and cottage systems, superseded only by eternal vigilance in those industrial departments where the sexes are brought together, and statistics showing a steady increase of defective element, there has come to be a growing conviction in many minds that “diseases desperate grown by desperate appliances are relieved or not at all,” and that the whole matter might be simplified and the nervous atmosphere relieved by early invoking the aid of surgical interference to secure at once safety to society, less tension to community life, and greater liberty, therefore greater happiness, to the individual. This has taken distinct form in an effort on the part of several members of

my own Board' (whom I accompanied to Harrisburg last winter) to seek legislative authorization for the asexualization upon admission to institutions of those adjudged mentally and morally defective. The bill, which passed both houses, was finally lost through the timidity of the Governor. We feel, however, that the step is a gain in that the attention of legislators has been called to the need of some measures to check the alarming increase of imbecility, and later the need may become more strongly evidenced in the development and evolution of the colony system, the foundation of which has been the culminating work of our nineteenth century history.

This the natural outcome of the work must form the only natural relief from the overcrowded conditions; and, in satisfying the craving for change of environment, it would offer greater variety and stimulus in maintaining the standard attained during the period of training.

In this Massachusetts holds her own, Waltham celebrating most fittingly its half century by entering upon a new endeavor in establishing a colony for her trained children. While this is an example challenging our emulation, again recuts the suggestion that united effort for a common end might accomplish more. The States may not be ready to respond to calls for many colonies, nor the institutions yet ready to supply them, but the national government might heed a proposition from us for one which would serve an outlet for all.

An ideal spot might be found—either on one of the newly acquired islands, the unoccupied lands of the Atlantic seaboard, or the far West which, under proper regulations, could be made a true haven of irresponsibility, and deriving its population as it would from the trained workers from the institutions throughout the country, might become in time almost if not entirely self-sustaining.

The new century finds us then at a parting of ways where new fields open before us. Cutting loose from early traditions, we need to build upon the experience which has demonstrated the impossibility of training for the idiot by claiming from society immunity from that burden, while untrammled we employ our energies to getting best results in building up a self-sustaining factor out of the improvable imbecile, and address ourselves to the task of weeding the garden of humanity from the tares which a highly nervous age has sown broadcast. Not only weeding out, but garnering so safely that no untoward accident or chance may statter seed that can produce only imperfection and ill.

Some definition of our position and of our obligations as guardians for defectives and defenders of society which they threaten, would, it seems to me, come with singular appropriateness just at this juncture. Forming an authoritative basis for private judgment and expert opinion as also solid grounds for appeals for legislative aid, it would discharge at once our obligation to the past and also the future, in preparing the way for those who shall enter into our labors for continuous advance on new lines.

THE ETIOLOGY OF ARRESTED MENTAL DEVELOPMENT.

H. RICHARDSON, M. D., MOUNT HOPE RETREAT, MARYLAND.

THE CAUSES of defective mental development can presumably only be due to a defective condition of the brain. At present they are but little understood, largely from there not having been a careful study of the physiological and pathological conditions of the patients, and from the prevailing habit of accusing heredity, and the sins of the parents for the unfortunate condition of the children.

That the prenatal influence of disease of the parents or at least of the mother has an effect upon the offspring is certain. Syphilis in the mother is no doubt the cause of many diseased conditions in the children; but the syphilitic child is a very definite type usually dying in infancy, and not at all resembling the ordinary idiot and feeble-minded child. Alcoholism in the parents is considered as a cause, and in Scotland the prevailing habit of intemperance at the wedding was held accountable for the very common occurrence of the first born being feeble-minded. But when we consider the very large proportion of alcoholic parents and the number of children that must be conceived while one or both parents are under the influence of liquor, and the number of idiotic or imbecile children born to such parents, it seems evident that there must be some other factor which produces the arrested or non-development of the mentality of the child.

For example, I have now in the institution a girl who might be classed as a high grade idiot who is the fourth child in a family of nine, the other eight being perfectly normal. The father has been a drunkard ever since he was eighteen years of age, and still more remarkable in this case there is not the monotonous history of a fall in childhood. Why should this child be afflicted and the other eight escape when the conditions under which she was conceived were the same? Imbeciles who have been impregnated by imbeciles have produced normal children as a rule in the few cases recorded, and in my experience I know of a case where a feeble-minded boy of eighteen impregnated a feeble-minded girl of sixteen producing a perfectly normal child.

There can be no doubt that prenatal influence plays a part in the production of deformities, diseases and imbecility, but what I wish to lay stress upon is the exaggeration of this factor. It is the law of inheritance that "like produces like," and that, "acquired characteristics are not inherited;" therefore, the effect of disease in the parent affecting the offspring is not heredity. Heredity necessitates a morphological change and when it produces variations of type it is usually called a "*lusus naturæ*."

I lay particular stress on the above as, in order to explain the causes of idiocy, it is necessary to bear in mind that it is not with a morphological embryonic change that we have to do, but with a disease contracted during foetal life from the parent. Of course there may be idiots, the result of a morphological change, but they are probably as rare as a case of six toes or six fingers, which anomaly has more than once been inherited for a generation

or two, and it is probable that by careful selection a six-toed race might have been developed.

Why does the brain not develop? The first reason may be that the cells of the primary cerebral vesicles from which the brain is derived are histologically imperfect. Should this be the case, however, we would expect little or no brain substance and there would be a macroscopic deficiency in the organ. In the majority of cases the brains of idiots are but little below the normal in size and weight, in some cases above normal and there are few cases on record where any of the portion of the brain is absent. It follows then that what is necessary for the complete development is present, but from some cause the development is arrested. What are the possible causes of non-development? Want of nutrition, poisoning, and destruction are the only three conceivable causes, with the exception of a chemico-morphological pathological condition of the cells preventing them from re-acting to stimuli.

Want of nutrition is probably by far the most common cause. An organ requires a certain amount of nutrition for existence, a certain amount for growth and a further amount for functioning. There are here then three conditions: if the brain does not receive enough blood for existence it dies; if it receives enough for existence, but not enough for growth, it remains small and fails to develop; if it receives enough for existence and growth, but not enough for function, it will not re-act to stimuli. As there is but little or no collateral circulation in the brain, should any artery be of insufficient size the portion of the brain supplied by that artery will suffer. Should the vertebral or carotids be congenitally small a larger area of brain will suffer. Should the aorta be small or the heart weak or the valves deficient the brain will be the organ which will lose the greatest proportion of blood, because owing to our erect position the heart has to overcome the hydrostatic pressure of gravity of a column of blood of the height from the heart to the vertex. The weight of a column of blood is about 1.9 mm Hg per inch, so that in a man six feet high the pressure to overcome by the heart to force the blood to the brain is equal to about 50 mm Hg and proportionately less for a child according to its height.

If the aorta is narrowed or the quantity of blood forced through it by the heart is insufficient, the brain will suffer more than the other parts of the body, as the blood stream will naturally flow in the path of least resistance. Much has been written for and against the existence of congenital narrowing of the aorta. Sater arguing that the reduction in calibre found post-mortem is due to increased elasticity of the vessel walls. Admitting, for the sake of argument, that this is so, we have an artery which is more elastic and whose contracted condition is less than a normal vessel and presumably that it will take greater heart power to keep the artery dilated. Ohlmacher in some autopsies on epileptics, who were in some cases also imbecilic, found the diameter of the aorta to be about 5.0 cm instead of the normal 8 cm, being a reduction of area of three-fifths.

The circulation in the brain is regulated from the splanchnic area, as the cerebral vessels have no vaso-motor nerves. It is by contraction of the vessels in the splanchnic area that the blood is prevented from accumulating in the abdomen by gravitation on taking the erect position. If from any cause

the vaso-contraction fails to take place or is only imperfect the circulation to the brain will be reduced.

The want of nutrition in the brain may be due to congenital organic heart disease; congenital non-development of the arteries, either the main vessels affecting the whole organ, or the individual brain vessels affecting those parts of the brain which they supply. It may be due to congenital defect in the vaso-motor system.

If the quantity of blood to the brain be sufficient the quality may be deficient. The digestive and the assimilative powers of the imbecile are apparently abnormal; but I have not found any metabolic experiments recorded in literature, and consequently can give no account of what the abnormality may consist. It would be most interesting and probably throw much light on the nutritious condition of these cases if metabolic experiments were conducted. As the imbecile will usually eat what is given him a varied diet which increases the labor of analysis so much would not be required. The collection of urine and fæces would probably present difficulties, but they could no doubt be overcome. The separation of the various forms of nitrogen as they are eliminated by both the urine and fæces would, I feel sure, repay the trouble of analysis.

One of the greatest of modern discoveries in medicine is the connection of cretinism and myxœdema with the cessation of function of the thyroid gland. Since Sir William Gull, Auld, Horsely, Mackenzie and others pointed out the etiology and symptoms of cretinism numbers of hopeless cases have been more or less benefited. Their discovery has led to a system of organo-therapy which may have a great future; but as yet the experiments have been principally empiric, and, with the exception of the thyroid and suprarenal capsules, the results have been of questionable value.

I do not propose to go over the symptoms of typical cretinism as they can be found not only in literature, but even in the text books. I wish however to draw attention to the marked forms of cretinism or infantilism, in which the symptoms are not so marked and the diagnosis more difficult.

The complete or almost complete absence of the thyroid secretion at birth produces the well known type. There are cases where there is a sufficiency of thyroid for a few years, but the thyroid fails to develop at the same rate as the rest of the organism; and, at a certain age, a child who has been apparently normal commences to develop myxœdematous symptoms. This insufficient development of the thyroid is often due to congenital absence of one or more of the thyroid arteries. In other words the child may appear perfectly normal until he is attacked by some acute disease, measles, typhoid fever, diphtheria, pertussis, etc.; shortly after his recovery from the attack myxœdematous symptoms develop. This is due to there having been thyroiditis during the infection which produced a progressive cirrhosis of the gland. The child's development is arrested at the time when the gland ceases to secrete sufficient for his needs; and, as the reduction in secretion is progressive and gradual, the symptoms produced are atypical. Often the first symptoms make their appearance at puberty at which period there is an especial demand upon the gland. These cases rarely progress to complete myxœdema as the accessory thyroids make a compensating development

and the system apparently adapts itself to a certain extent to the absence of the secretion.

The following symptoms will be of service in diagnosing these cases, bearing in mind that the age at which the disease commences makes great variations in the intensity of the degeneracy; and also that many of them may be entirely absent, the child having apparently developed perfectly in certain lines while in others the development has been more or less retarded.

The most apparent symptom is the arrested growth, though the child may be fairly symmetrical in its proportions; short of stature it yet looks older than it really is; the head is often rather large; the face round and "moon-like," usually with a surly expression; the scalp and the skin of the face are thickened, sometimes in patches; the eyes are somewhat wide apart; the mouth large; the nose broad with a depression at its base; the hair is usually abundant, but coarse up to about the twentieth year when baldness commences often in patches; the mucus membranes are turgid, especially in the nasal passages, pharynx and larynx; adenoids are frequently present producing mouth breathing and a peculiar harsh nasal intonation, as if the patient were suffering from a severe cold; the tongue is generally swollen which has a characteristic effect upon the articulation; the neck is short and thick; the body well nourished; the hands are thick, and of a bluish tinge, the veins being distended. The feet are flat, short, broad, and cold as are also the hands which are subject to chilliness in winter and fœtal perspiration in summer. The skin may be thickened and is dry and harsh; perspiration, though not absent, is abnormal. The organs of generation are poorly developed, as a rule, the testicles not descending till late. At twenty there may be no more sexual development than at ten. In some cases the genitalia are fully developed. The hair does not appear on the face, in the axillæ or on the pubes till very late or not at all. The teeth are small, irregular, and decay early. There is something peculiarly typical about the degeneration of the teeth in cretinism and infantilism. They seem to turn black and crumble away leaving the stumps in position. The abdomen protrudes slightly, but the pseudo umbilical hernia is absent or very slight according to the degree and age of the commencement of the disease.

The mental development is sometimes but little impaired, but in the majority of cases they can hardly be taught to write or read. This difference between the physical and mental development has caused some observers to come to the conclusion that on the thyroid gland depends the physical growth, while the mental development depends on the parathyroids. Nocturnal incontinence of urine is also common. The pulse is usually normal as is the temperature, though the latter may be sub-normal. The respiration is often labored and noisy due to adenoids or hypertrophy of the mucus membrane of the air passages.

The above symptoms may be present and the mentality may be sufficient to prevent them from being sent to an institution, especially if the parents are in a position to keep them at home; but when there is a history of the child being normal up to a certain age and then his mental and physical growth ceasing, the possibilities are that the thyroid may be the cause of the condition.

There is another form of infantilism which has been described by Lorain, Bussaud and others, in which the child may be tall or short, but with small limbs of effeminate contour. The head is small, presumably due to the early closing of the fontanelles and sutures, the opposite to infantilism proper, where the fontanelles and sutures often remain open till late in life. In these cases there are often a few of the symptoms of myxœdema, and Hertogh affirms that many of them re-act to thyroid feeding. The genitalia are often poorly developed, but the bones show a somewhat different condition of development. In cretinism there is failure of the epiphyseal ossification while in this form ossification is completed too rapidly. Their development is usually very defective, but occasionally normal.

In the administration of thyroid there are a few points which I have found to be of great importance. The active principle of the thyroid thyroïdin is precipitated by acids, organic and inorganic, and should the small intestine be acid through its whole length, which is not uncommon in fermentative conditions when fatty acids are formed, no absorption will take place. This probably accounts for the cases reported where doses have been given with no effect. In children the dose should not exceed two grains a day to begin with; and, given in bicarbonate of soda solution, the dose can gradually be increased, but it must be carefully watched. The dose should be reduced in summer as the sweating, etc., produces discomfort; and it has been shown that if thyroidectomised animals are kept warm they will survive much longer than if the external temperature is low, consequently less thyroid is required in summer than in cold weather.

The history of the mother during pregnancy is of some importance as if she had an excessive enlargement of the thyroid gland during that time, it is probable that the hypersecreting of the gland in the mother supplying an excess to the fœtus arrested the development of the fœtal gland.

Of the functions of the thymus gland we know very little from the fact that it is essentially an organ whose function is connected with foetal life and childhood. It would be expected that some results so far would have been obtained by its use; but, except in a few cases in Basedow's disease, hypertrophic myopathy and rachitis, it has given no results. The persistence of the gland into adult life has been observed in several cases of epilepsy and it is the rule in Basedow's disease. It may be that the theory of Beard that its function is the production of red and white corpuscles is the correct one in which case no results could be expected from its therapeutic use.

The suprarenals have a very definite function in the human economy and are closely connected with the circulatory system, their action being to secrete a very powerful substance which keeps up the tonicity of the muscles, especially of the blood vessels. Disease with reduced secretion of these glands produces in the adult the well known symptoms of Addison's disease which, so far as I am aware, have not been observed in idiots, but a decreased secretion in childhood would produce the condition mentioned in the beginning of this paper, viz: a want of tonicity of the arteries, especially of the splanchnic area which would cause the blood to collect in the abdominal vessels and prevent a sufficient quantity from going to the brain. As the adrenalin, the name given by Takamine to the active principle of the glands,

increases the tonicity of all the muscles, the heart muscle would also be affected and its force would be decreased. I have made several observations of the effect on the blood pressure of suprarenal administered by the mouth and I have found that in cases where the blood pressure was normal or high the drug had no appreciable effect, but when the blood pressure was low it produced a marked rise of from 10 to 15 mm Hg. It has been stated that the drug acts very favorably in cases of rachitis.

Both the thyroid and the suprarenal have very marked action upon the circulation, the thyroid dilating the arteries thereby reducing the work of the heart and increasing the amount of blood passing through the organs, especially the lungs. It increases the oxygen carrying power of the blood and its absence reduces the amount of oxygen in the arterial blood so that in severe cases it may be below that of normal venous blood. The suprarenal gives tone to the muscles of the vessels and of the heart, and consequently acts in almost direct opposition to the thyroid.

The use of the parathyroid glands in medicine has so far as I am aware not been great. In France it has been used in Basedow's disease with good effect in a case or two. I have used it in a case of an idiot epileptic child in conjunction with thyroid with a marked improvement in his condition, but the improvement may have been due to the thyroid. His epilepsy was not improved.

Organotherapy in the feeble-minded, as in insanity, should be directed by the circulatory condition of the individual case; and, I believe it will be found that many of the cases which present no very marked symptoms of cretinism or myxœdema will be improved by the administration of thyroid. It will be of special value in cases of the absence of the menstrual function; in fact, it acts as a very good emmenagogue in many cases apparently otherwise normal. Suprarenal is worth a trial where there is evident want of tonicity of the arteries and weak heart action.

I have laid especial stress on the circulatory conditions in this paper, not so much from personal observation of the feeble-minded, as my opportunities have been very few; but, from my observations on the insane in this institution with a population of six hundred and fifty, I am convinced that the primary cause of a very large proportion of our cases is to be found in a pathological condition of the circulatory system, and I wish to draw the attention of those especially concerned in the treatment of the feeble-minded to this fact expecting that they will find the same factor underlying many of their cases.

I must apologize to those in the specialty of the care and treatment of the feeble-minded for writing upon a subject of which I have no practical experience and must ask them to remember that this paper is theoretical in its application to their specialty, but the feeble-minded and the demented are not far apart, the mental difference being caused by, in the one case, "never having known," and the other, "losing what he has known."

THE ETIOLOGY OF FEEBLE-MINDEDNESS

BY WILLIAM N. BULLARD, M. D., BOSTON, MASS.

IN THINKING over what I could present to this Association, it seemed to me that I could do nothing better than offer a few considerations as to the lines in which we could and ought to expect progress in our knowledge and treatment of the feeble-minded within the next few years.

The general care and education of this class in institutions has been so greatly advanced within a short period and its general principles are so well understood in the better institutions that on this score one could only discuss certain details which would better be left to those engaged in the practical administration and supervision of such work.

It is true that the neurologist sees as patients principally those who are not at the time under the care of any institution, but are at their own homes; but they are of the same sort as those in the institutions, and I feel strongly that in the large majority of cases it is for the direct interest of these patients and for their families, that they should be placed as early as possible in good institutions specially adapted to their care. Unfortunately in Massachusetts this can not always be done as soon as we could wish on account of lack of room. In institutional care consists really the best present treatment for this class, and beyond this, as a rule, only palliative treatment is wise. Medicine, except for incidental or complicating conditions, is of little avail. Surgery is usually useless and is rarely to be attempted even in traumatic cases where it might *a priori* seem to be most justifiable.

Within the last ten years our knowledge of the pathology of the feeble-minded has greatly advanced, but unfortunately the more accurate it becomes the more hopeless it shows the probable result of any medical or surgical treatment to be.

Our principal hope for this condition lies, I believe, in prophylaxis. This may lie within the reach both of the general practitioner and of the specialist, and it is to this that our special endeavors should now be directed. With our present methods of care and treatment we are now overburdened with the numbers of those who depend upon us, and we are likely to be still more so in the near future unless we can find some way by which these numbers can be decreased. At present we can do almost nothing in this direction because our knowledge of the *primary causes* of the pathological conditions is still so inaccurate and so inexact. We know in a very general way what the pathological conditions are, and it is highly important that we should know more about them, but this field of work has already been more or less recognized.

The best provisional pathological classification for our purposes is probably that of Bournéville who divides idiocy into nine forms or classes:

- I. The hydrocephalic.
- II. The microcephalic.
- III. That symptomatic of arrest of development of the convolutions.
- IV. That symptomatic of a congenital malformation of the brain (true porencephalus, etc.) or of a pathological malformation (pseudo-cysts, etc).

- V. That symptomatic of hypertrophic or tuberos sclerotic.
- VI. That symptomatic of the various forms of atrophic sclerosis.
- VII. That symptomatic of meningitis or chronic meningo-encephalitis.
- VIII. The myxœdematous.
- IX. That symptomatic of tumor of the brain.

This classification has many faults, being unscientific and not formed on a true pathological basis, but it may serve temporarily.

As nearly all, indeed all the severe cases, are incurable, the clinical diagnosis becomes of less practical value and for our purposes the pathology is used in connection with the causation. The most important practical questions for us are, "What are the causes which produce the pathological conditions, and what are we to do to prevent these causes from operating?"

Let us first attempt to institute a reasonable prophylaxis. To do this we must determine with some probability the etiology of the affection. It is to this that I would now particularly call your attention, for I believe that it is in this direction that our efforts can be most effectively turned and I hope that some active measures can be taken by this Association to organize and to carry out this work.

A considerable amount of literature on this subject has been published, but with few exceptions it is unsatisfactory. Its conclusions are doubtful or negative and its statistics do not always inspire confidence.

Our first step it seems to me should be to determine with some degree of accuracy certain definite questions and this can be done fairly well by our institutional statistics, providing only that the numbers are sufficiently large and the facts reliable. The reliability of the statements of the parents and relatives of the feeble-minded in regard to certain matters is unfortunately not always perfect, and this is not to be wondered at inasmuch as we are obliged to ask questions more or less reflecting on the moral character of the father or mother. The part played by hereditary syphilis in the causation of these conditions has been much discussed. We can now say, however, that its probable effect was in former years much exaggerated and I believe that it is responsible for but a very small percentage of the congenital cases. The effect of alcoholism in its various forms in the parents; chronic alcoholism, frequent attacks of acute alcoholism and especially the effect of alcoholism at the time of coition, is perhaps more important, and on these questions, and, especially the last it is most difficult to obtain reliable data.

Yet, while we may encounter more or less difficulty in definitely settling these questions, with care and organization I think that we can in time shed much light on them. There are, however, others much easier to answer, provided our records can be scientifically examined. In seeking the etiology of feeble-mindedness, we might first divide our patients into those in whom the trouble is congenital, or in whom the first symptoms occur very early in life without being preceded by a definite cause, such as an injury or distinct disease, and those in whom it is not congenital. The first is by far the larger class.

Having determined the proportions and numbers of these, we might inquire into the character of the labor and the probable existence of injury to

the brain, either during pregnancy or during labor. From my own experience I am convinced that we shall find that a very considerable number of the feeble-minded owe their affection to injury of the intracranial structures, some during pregnancy, but the larger proportion during labor. This injury during labor, moreover, is due in most cases to the pressure on the head from natural causes and is not to be referred to the pressure of forceps. If this can be proved, it may be our duty to demand of our colleagues, the obstetricians, that forceps be used in all cases where the head is subject to severe or prolonged pressure as a means of relieving such pressure and preventing cerebral injury.

Many other questions connected with causation may be considered, and the light of reliable statistics thrown upon them by you.

My principal object in presenting this paper is to bring about the adoption of some organized endeavor to determine these questions. I believe that this can best be done through the co-operation of the different institutions.

DISCUSSION

Dr. Bullard exhibited certain tables that he had prepared, and explained the method of securing facts and statistics.

He said that it would be of great value if they could get more information from parents and if the Association would take steps to secure such information, especially from the mother and also from the attending physician. He stated that:

If it is true that prolonged pressure at the time of birth is a definite cause of idiocy we should know when to advise the early use of forceps. If on the other hand we find that conditions during pregnancy are the true cause in many of the cases, we could say to the physician in charge that more care should be taken of the mother during that time. If we can really obtain definite information in regard to causation, we may do something towards prevention of that infliction, but the first step to doing that would be to get thorough statistics and the best way to do that is to have the Association take the initiative in securing them.

Dr. Keating. I believe that that was the object of the committee of which you are a member.

Dr. Bullard. I was not elected a member of the committee until after the meeting. I wrote some time ago for a meeting of the committee, but none has been held.

Dr. Fernald. The committee was authorized to outline a method of classification and to formulate for the approval of the Association a scheme for collective investigation. In partial extenuation of the failure of the committee to report I might say that Dr. Bullard has been abroad nearly all the time since that meeting and it has not seemed possible to get the committee together. Dr. Bullard's paper shows that he has done considerable work in that direction, I have also sketched out some work, but am not yet ready to report. I think the time is ripe for us to begin a collective investigation. If we can investigate only ten cases a year in each institution in ten years we

should have a large number available for study.

Dr. Bullard. I hope that the Association will take some definite action at this meeting in regard to work in this direction during the coming year. If the thing is put into the hands of a committee, no matter how good, the institutions will this year do nothing.

Mr. Johnson. If the committee will agree on a form and will send it out to the institutions we will do what we can. We have many cases about which we have the facts.

Dr. Bullard. The great difficulty is to get facts in regard to the mother during pregnancy. A personal interview by some one who is accustomed to dealing with such persons is necessary.

Dr. Rogers. There is great difficulty in obtaining such facts.

Dr. Bullard. I find that with a little practice and with the understanding that the questions are asked for the benefit of the child, and to prevent the birth of similar children, I obtain on the whole a pretty fair statement. Occasionally I have had a woman say to me, "I did not tell you the exact truth about that," but on the whole they have been very fair and often I have been able to corroborate the facts in other ways. We must explain to people that we want this information not as a matter of curiosity, but as a matter of business. In Boston we have a great many parents of the lowest order and of all nations, so that we have a number of classes to draw from.

Dr. Rogers. One woman told me that the child she brought to me was the only defective child in their family history. She told me afterwards that she had been the mother of two other imbecile children, a boy and a girl, who had died.

Dr. Bullard. You will find such cases, but saying to them that it is a matter that will not be known outside of the Association, and that it is for the benefit of their child and of similar children, as a rule they will be ready to help.

Dr. Rogers. I think you gave seven per cent where the causation was alcoholic.

Dr. Bullard. In seven per cent one or both parents drank to excess. This is as far as we can go. Whether that was the causation is another question. My own impression is that in a good many cases that might be called alcoholic the cause would be indirect. If the father is a hard drinking man then the condition of the mother is one of great anxiety during pregnancy, and the child is very likely to receive more injury in this way than from direct inheritance from the father. The affect of heredity is an unknown factor. How it acts is an unknown factor. It may be that the child directly inherits a weak mental condition from the parents, but we have no evidence. I believe that a weak mental condition depends on a cerebral lesion of some kind, but it is difficult to say just where heredity comes in, except that the tissues are weak and liable to injury.

Dr. Wilmarth. Isn't that the whole of it, that the child inherits an unstable nervous condition?

Dr. Bullard. In certain cases the tissues may degenerate. In the Jukes' family there seems to have been the direct influence of heredity, but how far it acts and how it acts is unknown at present.

Dr. Barr. It is very uncommon to find a single unit as the cause of imbecility. I have examined 4,433 cases and I have cast out all where there seemed to be doubt as to the cause. In the majority of cases there was decided mental defect in the parents.

Dr. Barr asked to be excused from serving on the committee, but was asked by the chair to keep his place during the session.



NOTES ON CASE HISTORIES

BY GEO. MOGRIDGE, M. D., GLENWOOD, IOWA

CASE I.—M. B.—Female. Admitted to the Iowa institution, May, 1892, aged fifteen years. Dismissed, September 22, 1895. Classified on admission as a medium grade imbecile. Was in the school department and improved much in scholastic and manual work. Was removed by her guardian against the judgment of the management of the institution. The girl was possessed of some property in her own right. In April, 1902, an application for her re-admission was made by her present guardian, a lawyer, who stated that she was at the Poor Farm and had a child five years of age for whom application was also made.

CASE II.—G. M.—Female. Admitted to the Iowa institution in July, 1894, aged sixteen years. Dismissed, December, 1901. She was admitted from a religio-charitable society. Classified as a high grade imbecile and improved in every way during her stay at the institution. She lacked, however, in the higher powers, and it was against the advice of the management that she was removed. Three months after her dismissal she married.

CASE III.—G. K.—Male. Admitted to the institution in February, 1891, aged fifteen years. Dismissed, March, 1895. Classified on admission as a medium grade imbecile. Improved during his stay at the institution, being capable under direction of accomplishing a fair day's work. Was not self-governing nor self-controlling. Was dismissed on the demand of his mother who was informed of the dangers of such a course. Two days after dismissal he committed a criminal assault upon a small girl, and was tried for the offence in the district court. On the evidence of the physicians of this institution the case was taken from the jury and the boy was sent to a hospital for the insane. He was discharged from the hospital in December, 1901, as cured. Is now in the Kansas State Prison.

CASE IV.—M. C.—Female. Admitted to the institution in December, 1900, aged seventeen years. Dismissed, June 26th, 1901. Classified as a medium grade imbecile. Although only a short time at the institution, it was sufficiently long to demonstrate that her mental capacity was such that she was an unsafe person to be at large. A philanthropic society was instrumental in getting her mother to send the girl to the institution. Was

dismissed upon demand of the mother. Two days after her arrival at home an attempt at murder was made, she being the "girl in the case."

Under the Iowa law there is no legal committment of the feeble-minded and this is frequently a source of anxiety for the welfare of a certain class of our inmates. The after history of some who have been at the Iowa institution is extremely sad, and it occurs to me that similar experiences are met with in other states. The law in Iowa makes eligible for admission to the institution children between the ages of five and twenty-one years. Once admitted, however, they can remain indefinitely. The application for admission is to be signed by the parents or guardian, or in the absence of either of these, by the county authorities. Further than this, there is no legal proceeding to be gone through with and the child can be removed at any time by those having legal authority. Our experience has gone to show that many are removed whom we are convinced are unsafe, and yet we have been unable to convince the guardians of this fact. The greatest danger is to the higher grades, even when under the care of reasonably judicious guardianship, and we have pointed out the dangers as we believed them to exist, and as our experience has shown, calling attention to the additional fact that should the child be left alone to fight the battle of life, he would inevitably fail; but our efforts have in many instances been in vain, and only the actual conditions arising as we have forecast, have brought a realization of the error in disturbing the child's residence at the institution. I have in mind numbers of instances in which, after an absence from the institution of some years, efforts have been made to reinstate the child, after having met with mishaps and misfortunes of many kinds. In the case of males, we are not able to comply with the requests for re-admission, owing to their having passed the age limit. In the case of females, it will be slightly different from now on, as the legislature of Iowa at the last General Assembly extended the age limit at which females might be admitted to forty-six years. This will relieve in a measure some very needy conditions, but it does not do away with the evil of their being no legal committment by which the officers of the institution can prevent the removal of one who is unfit to mix with the general population.

The foregoing has reference particularly to the more intelligent of our children, those presenting but slight defects of mentality. For various reasons the lower forms are not often removed, but the brighter ones occasionally improve so much, under training and discipline, that superficially at least, they compare quite favorably with the other members of the family from which they spring. We have often found, also, that children in whom benevolent societies have interested themselves, or have recommended that they be sent to the institution, are frequently removed from the institution by the parents at the first opportunity. (Case No. 4 is one in point.) It seems in these cases the parents are resentful of advice or fancied interference; they are suspicious and prone to imagine that they are being deprived of their children, and hence they are very insistent and unreasonable.

Legal committment has, of course, drawbacks. The institution, as constituted in Iowa, is primarily a school, an extension of the school system, for the benefit of those who otherwise can not receive any school training, and

this thought has always been fostered, so that the advocacy of a legal detention is both difficult and delicate, and yet in justice it would seem that there should be some means devised by which the officers of the institution could retain those that are manifestly unsafe.

I have called the attention of the Association to the matter for the purpose of obtaining an authoritative expression that would be on permanent record for reference at such time as it was deemed wise to take up the matter of legal commitment and detention.



REPORT ON PATHOLOGICAL WORK AT THE IOWA INSTITUTION FOR FEEBLE-MINDED CHILDREN

BY O. C. WILLHITE, M. D., GLENWOOD, IOWA

THERE HAS been some little bacteriological work, but this has been limited, however, to tubercular cases and making culture from various throat troubles. There has also been numerous urinalysis made, especially those acutely ill, but most of the work has been confined to post mortem examinations.

There has been forty-two necropsies, and a record kept of same. These include children mostly from the asylum department. Out of this number eighteen were epileptics. The proportion of the two sexes are about equal, twenty-two males and twenty females. The ages at the time of death range from nine years to that of over forty years, the average being about twenty years. The clinical causes of death are various, and are as follows;—

Epilepsy	-	-	8	Meningitis chronic	-	2
Pulmonary tuberculosis	-	-	13	Peritonitis, tubercular	-	2
Miliary tuberculosis	-	-	3	Enteritis, tubercular	-	2
Exhaustion	-	-	4	Burn	-	1
Marasmus	-	-	2	Pyemia	-	1
Pneumonia	-	-	2	Intestinal obstruction	-	2
Cirrhosis of liver	-	-	1			

From the above one will notice that tuberculosis causes a large per cent of the deaths, nineteen cases, or forty-five per cent of the deaths being due to some form of this disease. In addition to these which have been diagnosed tubercular, I find in the post mortem room seven others which showed tuberculosis of some organ, one case presenting healed tuberculosis, so that sixty-two per cent of the necropsis showed tuberculosis in some form.

We also find eight deaths due to epilepsy, and in addition to those who died directly from this disease, there are ten others who suffered from epileptic seizures during life, making a total of eighteen cases, or forty-three per cent which were epileptics. Thus it will be seen that much more than fifty per cent of the deaths are due directly to tuberculosis or epilepsy.

While some few of the cases upon which an autopsy was held offered no

special gross pathology, I can say that most all cases showed an under development and under weight. The brains are weighed in toto, including membranes and ventricular fluid. The lowest was 750 grams which was a case of porencephaly, resulting in practically a destruction of one cerebral hemisphere. The highest weight was from a moderate case of hydrocephalus, the brain in this case weighing 1910 grams, but after removal of ventricular fluid the brain substance and membranes weighed 1680 grams. The average weight of the male brains was 1237 grams, females 1142 grams. While these averages are much below the normal adult weight, yet when compared with the weight of the body and internal organs it would be difficult to state the comparative diminution.

One thing that is worthy of note is that out of the eighteen cases of epilepsy, nine of them, or fifty per cent, show a gross lesion of the brain. One was a porencephaly, one a large cyst in motor region, one an old hemorrhage, and the other six a well marked gliosis, in some cases involving an entire cerebral hemisphere, others only a lobule or few gyri. These nine cases also showed a chronic leptomenigitis. The other fifty per cent offer no macroscopical lesions except one which shows a leptomenigitis and an encephalitis.

Out of the forty-two cases, nineteen show evidence of a slow leptomenigitis. Ten of these, however, were found among the epileptics referred to above. Five cases showed a pachymenigitis.

Two cases only of the Mongolian type have come to the post mortem table. The contours of the brain in each case were rounded, pons and medulla relatively small, the thyroid in each case was present and was normal in its macroscopical appearance.

There have been slides made and examined microscopically in most all these cases, many showing pathological changes, but at present I should not attempt to draw any definite conclusion. The future, no doubt, holds much in store for workers in this field.



SELECTED ARTICLES

HEART AND CIRCULATION IN THE FEEBLE-MINDED*

A CLINICAL AND STATISTICAL STUDY

BY JOHN MADISON TAYLOR, A. M., MD., AND F. SAVARY PEARCE, MD.,

PHILADELPHIA

THE writers desire to present in this contribution the results of observations made at the Pennsylvania School for Feeble-minded Children at Elwyn, Pa. Studies were begun also at the schools at Vineland and at Haddonfield, New Jersey, but only the data from the first institution are embodied in this paper. They will be completed as opportunity shall permit,

*Presented to the Section of Pediatrics, American Medical Association, June, 1900.

the research occupying so much time to complete that this is only a partial presentation of their work. It is not feasible to carry out parallel investigations as to the collateral factors—blood, peculiarities of innervation, secretions, etc.—necessary to a full understanding of these complicated states until the equipment of the schools shall afford larger opportunities for thoroughness.

Of literature on the subject there is little to be found.

The attention of one of us was directed some years ago to several cases of imbecility wherein the cardiac and circulatory disabilities were pronounced and seemed to bear causal relationship to the mental impairment. In some of these treatment of the defects was followed by marked improvement, and even now we have six cases under continued observation. It would be an obvious inference that if attention were given to the vascular defects in the earlier years of life this improvement would have been greater. A further plain generalization is that those cases of backward mentality, the product of developmental interference, could be mitigated by securing more normal cerebral circulation and the maintenance of a blood-supply adequately freed from ptomaines and other intoxications. The lowered vitality of many of these individuals is shown in primary faults of development in many parts of the central nervous system followed by gastro-intestinal and other organic disorders, and as a sequel to these the blood and the other tissues suffer. This is most conspicuous in the lower types of so-called idiots. This subject has received very moderate attention. We have done a little in that direction. We are at this time especially attracted by those of the so-called imbecile class or backward-minded individuals in whom a fair degree of amelioration can be expected, and we hope yet to secure some practical results by treatment directed toward the vascular system and its innervation. For the idiot little can be expected from any treatment other than educational and hygienic.

The nervous system of the young child suffers from the defects of toxins in many ways not yet understood. It is possible that the foundation of much disease, especially that affecting the brain, is laid long before we are capable of suspecting or detecting its presence, and through the agency of insidious and unknown toxic agents. It is also a fair inference that much of this damage is expended in large measure upon the structures of the circulatory apparatus, through and by which the organs of elaboration and elimination are maintained in a condition of vigor and integrity. If we could control the activity of the vaso-motor system alone much could be accomplished. Acute delirium, maniacal states, the rapidly developed melancholias—in short, the alternation of exalted or depressed states—may be taken as an expression of a cytolysis of the cerebral neurones. Again, it is reasonable to infer that the peculiarities of the mental phenomena depend in some measure upon the degree of cell-alternations as well as upon the number, condition, and situation of the neurones involved in the process.

Acute poisoning from the gastro-intestinal tract is known to precipitate infantile convulsions. If continued and repeated this may develop into epilepsy, and the irritated cortical neurones thus suffer more or less permanent damage. A mild form of toxæmia may produce vertigo and other pronounced but evanescent discomforts or disabilities.* Again, the auto-

*See articles by one of us, *Sajous' Annual*, vol. vi, "Convulsions."

toxæmias due to the suppression or disturbance of the functions of an organ, as seen in myxœdema, cachexia strumipriva, and those states due to the overproduction of the normal and the evolution of abnormal products of the organism, as in the condition wherein hydrogen sulphide is retained in the blood, exophthalmic goitre, acetonuria, etc., all can be said to bear close relationship to circulatory incompetence. So, indeed, but to a less conspicuous degree, as in the other two subdivisions of Albu, auto-intoxicants occur from anomalies in the general metabolism without localization, as in gout and oxaluria, and those due to the retention of the physiological products of metabolism, such as uræmia and the effects of imperfect oxidation, etc.

In a study made by Dr. Charles A. Oliver and Dr. A. W. Wilmarth, in 1891, it was shown that among the Mongolian forms of idiocy the general pathological condition bore close causal relation to imperfect development of the entire vascular system, with consequent disease of the structures all tending toward early fatalities. These individuals had club-shaped, cold, clammy extremities, necessitating extra clothing and exceptionally heated apartments. On them mere scratches became ulcerous, and these ulcers failed to heal until warm weather returned. Ecchymoses were frequent and prevalent during any form of sickness, and they generally succumbed during the colder months of the year, with gross hemorrhagic or exudative lesions in the mucous tracts and other vital areas. The common etiological factor was great activity and a final overthrow of the nutritive centres during the earlier portion of the antenatal existence.

The subsequent part of this study consists of tabulated records of the seventy-two cases studied in the total number of 955 inmates examined: Males, forty; females, thirty-two.

All cases were considered and only those recorded in whom there was any suspicion of lesion.

The cases were taken from among the higher-grade children chiefly, since it is in these we may hope to find transition epiphenomena of cardiovascular sort worthy of place in practical interpretation, and for whatever of help may come toward evolution through mechanical and chemical agents.

The percentage of boys admitted to the institution is about three to one compared with girls, probably on account of the fact that girls can be better shielded at home. Boys are, as a rule, brighter mentally and stronger physically.

As detailed in our "Preliminary Report of the Heart and Circulation in the Feeble-minded," the writers have pretty conclusively in the present work arrived at a confirmation of the hypotheses recorded in that paper, and feel more than ever impressed with the great importance of the subject under consideration. From tabulation of the examination of the seventy-two cases carefully studied we find the following:

MALES. Average age of the males (eight to twenty-two years) twelve years. Of these fourteen were of low grade; fourteen of middle grade, and twelve of high grade imbeciles.

Heart. We found no notable transposition of this or other organs in the number. In twenty cases the heart was somewhat hypertrophied, in one greatly so; this is an athletic, medium-grade imbecile. In two the heart

was undersized. In four cases the heart was lower by one rib than its natural position (without hypertrophy). The cardiac pulsation was feeble in twenty-five cases. An hypertrophied heart in the feeble-minded does not as a rule present the increased pulse tension found in those of normal intelligence.

Bradycardia (fifty beats per minute or lower) existed in three cases; in these there was no other discoverable lesion, so that we conclude it to be perhaps an expression of central vagi irritation. The cardiac impulse was very feeble in twelve cases, and the impulse in addition very diffuse in ten cases; all this without gross evidence of lesion in the cardiovascular system. Thus there would seem to be a disproportionate correlation between the detectable organic lesions in the feeble-minded and the signs presenting; in other words, the central neuronc degeneration through deficient innervation may disturb circulation as does the organic disorder *per se* of the circulatory apparatus. At the same time the contention is made that organic diseases of the heart and blood vessels do occur much more frequently among these defectives than in people of normal brain development. Thus careful observation and treatment of the defect will undoubtedly assist both physical and mental development of the imbecile. Irregularity of the pulse was noted in five instances among males where cardiac lesions coexisted.

Murmurs. There was no murmur among the males that obeyed the law of the so-called functional murmurs. Of organic murmurs there were six presystolic mitral and ten systolic mitral murmurs. There was one aortic systolic murmur and one double mitral murmur. Seventy-five per cent of the heart sounds were the so-called valvular sounds, the muscular element being feeble or ataxic. The second aortic accentuation was not quite so frequent as mitral valvular sounds—as though the relation of the co-ordination of lungs and heart was proportionately more at fault than between the heart and systemic circulation. In one case the second sound could be detected only at the pulmonary cartilage, and in most cases this element of the second sound was also markedly accentuated.

Other special characteristics of heart-beat worthy of note were instances of marked arrhythmia in only three cases. Reduplication of the second sound was heard twice at the pulmonary area. In one case there was a patulous foramen ovale found subsequently at autopsy without physical signs to account for it during life.

Dr. Ales Hrdlika, in the *Twenty-fourth Annual Report of the Middletown, N. Y., State Hospital for the Insane*, gives the following figures as to heart disease in the insane:

Examined 1000 patients; found:

	Males	Females
Organic heart disease - - -	10.6 per cent.	11.6 per cent.
Functional derangement - - -	15.4 "	8.0 "

Of which there were noted:

Simple hypertrophy - - -	5.0 per cent.	4.2 per cent.
" dilatation - - -	1.0 "	1.8 "
Mitral insufficiency - - -	2.4 "	4.2 "
Aortic " - - -	2.0 "	0.6 "
Tricuspid " - - -	0.2 "	0.8 "

			Males		Females
Heart very excitable	-	-	6.4	"	4.4
" " feeble	-	-	7.2	"	2.8
" " irregular	-	-	1.8	"	0.8

Thrills. A thrill was felt at the apex but twice, but, as noted in six instances, there were presystolic murmurs, as though the muscular force of the cardiac action was greatly weakened, which we contend is a constant phenomenon, just as the general musculature is enfeebled in these defectives. Exception to this is in those rarer instances of moral perversion whose relatively greater physical strength accompanying a smaller than normal brain capacity (thus without proper inhibition) obtains as a potent cause for aggravating the psychological imbalance already existing. Indeed, were bodily vigor less in these cases we might hope for diminished moral perversion.

Pulse and Circulation. Irregularity of the radial pulse was found in seven instances (17 per cent.), which is evidence that there is greater ataxia of the vascular system than in the heart itself. Studies of the effects of such drugs as digitalis as favorably affecting these cases in the feeble-minded are important, just as more careful observations of cardiac conditions in general practice yield better results in treatment. That peculiarities of the sympathetic innervation will become a fruitful field of research among the imbecile and the insane we feel certain.

The pulse-rate was over 100 in sixteen cases (forty per cent). This cannot be certainly reported, since the exciting conditions of an examination may increase the rate of the heart beats. In thirty-five of these cases there was the clammy skin and cold, bluish extremities which warrants the conclusion that the neurovascular system was much out of proper equilibrium. In the central nervous system of imbeciles the cerebro-spinal and vasomotor nervous mechanisms lack development and balance. The pulse tension seemed increased in but two instances, excepting in two others where the left carotid pulse was comparatively stronger, and the right radial pulse was comparatively increased in tension as compared with the pulse of the opposite side.

In one case of an epileptic adult male imbecile Addison's disease was pretty positively present. It may have been only an expression of tuberculosis of the suprarenal bodies boding a more general tubercular infection, which is the cause of death so frequently at the antipodes of the race (of the imbecile and insane and of the physically weak of a high order of intellection). The *reflexes* were generally increased in the males.

FEMALES. The average age of the thirty-two females studied was twelve years. Of these eight were low grade, fifteen medium grade, and nine were high grade imbeciles. There was no transposition of the heart or other organs among them. The heart was distinctly hypertrophied in six instances, was displaced down one rib in two instances, very evidently dilated in one instance, and was undersized, as shown by percussion in three cases. In twenty-six cases the cardiac impulse was feeble, and in one instance the "impact" on inspection and palpation was very diffuse. In this instance there was a very perceptible thrill which can be felt readily with the palpat-ing hand and yet not accompanied by audible sign (a murmur) is indicative of enfeeble myocardium rather than a vibration due to hæmatic or to valvu-

lar disease, so that in the imbecile of low type tissues generally we may expect more constantly to elicit this valuable diagnostic sign (the thrill) than in organic heart disease in individuals otherwise normal.

Murmurs. There were no functional murmurs heard among the females. This dearth of so-called functional murmurs in subjects otherwise giving audible signs of cardiac disease upholds the views of Jacobi that fewer and fewer murmurs can (if any at all) be designated as functional.

Of organic murmurs the presystolic mitral without thrill predominates. There were five such (sixteen per cent) in the cases examined. There was one aortic systolic murmur accompanied by a thrill in a subject of fairly good physique and cardiac action. In two instances there was mitral regurgitation. In such cases compensation is better maintained than is true of other instances of valvular disease.

It is a singular fact that œdema is not often encountered among imbeciles with even marked evidences of cardiovascular disorder. Studies of the blood component by the physiological chemists may yet be fruitful in explanations of this, and may also throw some light upon feeding and on excretion of metabolites—a subject which appears to the writers important in the line of preventive and, indeed, in curative medication.

Irregularity of pulse-beat out of harmony with heart rhythm was again demonstrated as among the males, as stated under the proper heading. It occurred in fifteen of the thirty-two cases (fifty per cent). Bradycardia existed in but three instances, and again where no demonstrable valve lesion was present. In over half (twenty) of the cases the radial pulses were rhythmic, but the alternating force of the pulse-beat was a notable sign of the prevailing status of vasomotor ataxia. Twenty-one cases were subject to rapid, feeble heart action—*i. e.*, over 110 per minute. In twenty-five the surface of the extremities was cold, bluish, or clammy.

The females seemed of lower tone physically than were the males examined.

The figures of Dr. Hrdlika in the report previously referred to show "out of five female imbeciles no one presents a cardiac derangement; out of fourteen males with the same trouble we find twenty-one and five tenths per cent of organic and seven per cent of functional troubles."

This author had only nineteen cases at his command to study, and yet the proportion of imbeciles in the males studied presented organic heart trouble in twenty-one and five tenths per cent and functional disturbances in seven per cent.

CONCLUSIONS. In a detailed study of the circulation of seventy-two cases of feeble-minded children at the Elwyn School the writers have found a great number of varied cardiovascular signs, and these out of proportion to the mental defect—so much so as to warrant assuming organic vascular heart disease to be a large etiological factor in continuing the downward course of imbeciles. The plea is urged for careful anthropometric studies and for observation in detail of somatic disease other than that of the nervous system in cases of mental enfeeblement. They are also impressed in this study by the fact that many of the high-grade cases can be bettered much more by attention being paid to therapeutics of the cardiovascular disorders of im-

beciles, also of the insane. The scientific laboratory studies of the blood and excretions will also in the future furnish valuable data, no doubt, in this direction, admitting the large rôle which biochemical products must play in the pathology of many diseases.

The action of certain alkaloids upon the peripheral circulation needs careful study and experiment.

The proper use of especially directed regulated movements (and imbeciles are notably good and willing imitators) will greatly help these afflicted beings. In uplifting the physique to however slight a degree the mentality will be improved.

We would urge also that overexercise of backward children is to be strenuously avoided as a part of their training. The impression should be made upon the teachers to withhold physical overwork, in view of their preponderating lowered physique and especially of their liability to cardiac disease, as demonstrated in this contribution. We do not wish to interfere at all with the good hygiene of fresh air and proper direction of active employments.

It can be safely affirmed that America leads in the practical application of these scientific truths which are gradually being formulated for the proper care of the dependent classes.



SYMPATHY

Ask God to give thee skill
In Comfort's art,
That thou mayest consecrated be
And set apart
Unto a life of sympathy;
For heavy is the weight of ill
In every heart,
And Comforters are needed much
Of Christ-like touch.

—Anon

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EDITORIAL.

We present in this number two papers on etiology, both of which merit consideration. Dr. Richardson calls attention to the function of certain glands in the human economy and the possibility of some defect here producing some form of idiocy.

The causes of psycho-asthenia present our most difficult and most interesting problem and we are continually driven back to it from whatever aspect of the subject we are considering. The early investigators worked over the family histories, the material furnished by the application blanks, etc. And although much remains to be done here yet the most important facts to be gained by this method have probably been worked out. And it is now necessary to dig deep in order to extend the boundaries of our knowledge.

Considerable work has been done in pathological anatomy and many gross lesions observed but only a few of the brains examined show gross

lesions sufficient to produce the effect noted. And in the finer anatomy and morphology of the neurone the work of Hammerberg still stands alone.

But the morbid anatomy of the brain is by no means the whole of mental pathology. Morbid anatomy while important and interesting is nevertheless only a minor field of the realm of mental pathology. The opposite view has prevailed and has been in large measure the cause of the slow growth of our knowledge in this line. In fact this view has really stood in its own light for very frequently the lack of mental history has made all examination of the brain of indeterminate value. Psycho-asthenia is a psychic as well as somatic disease and it is only when the psychic field has been well worked over that we can hope for some elucidation of the problems in the somatic field.

Consequently what we now need is a most thorough and detailed study of the mental as well as physical child. We must make elaborate and detailed case histories and strive to gain as near as possible a record of the mental history of the child. By bringing much we will be in less danger of omitting something of value which will be discovered later.

The average child is the normal child, consequently we must seek to discover in what way the psycho-asthenic child differs from the average. And here come studies in height and weight and in the growth curve, in motor control, strength and energy, senses, habit, etc., in stock of ideas, mental field, association, etc., thus working over into the field of case histories again.

It is only when we have determined in a fairly accurate and thorough manner what the psycho-asthenic child is that we will be able to work back and unravel the conditions that give rise to such defect. Here is the field for the best and richest investigation.—A. R. T. W.



NOTES AND ABSTRACTS

On the Presence of a Parasite in the Blood of Epileptics.*—In the blood taken by puncture of the veins of the fore-arm of seventy patients subject to general epilepsy, so-called idiopathic, in the Asylum Clinic of M. Magnan and in the service of M. Maradon de Montyel at the Asylum de Ville-Evrard, we have found, at certain periods of the affection, the constant presence of a micro-organism.

In the long inter-paroxysmal intervals the examination is most often negative, but when at the approach of the attacks, during or immediately after the incomplete crisis, the momentary losses of consciousness, the attacks of vertigo, one examines a drop of fresh blood with a magnification of at least 500 diameters, one finds in the plasma little points feebly refractive of

*M. Bra Translated from the *Arch. de Neurologie* July 1902. A. R. T. Wylie, Faribault, Minn.

a micron or less in diameter, singly or in pairs, animated by very active movements, bending upon themselves constantly, then singly or in more or less large numbers some bodies show a worm-like appearance of a length equal or superior to the diameter of the red corpuscles and most often composed of six or eight granules. Some are formed of granules of equal size, other present at their extremities or in their continuity granules which are larger, polymorphous, ovoid, bacilla-like, etc. The most typical form seems so be a chain terminated at each end by a larger particle. These bodies are animated by serpentine undulations, bending upon themselves, alternately in their middle parts and at their ends. They knot themselves up so well that it is necessary to observe them for a long time in order to discover their true form. They frequently adhere to one of the red corpuscles by one of their ends.

It is found according to the individual and the period of the disease that these worm-like forms are not found in the blood and one only meets isolated cocci or diplococci, either mobile and free in the serum or adherent to the red corpuscles or englobed in the phagocytes.

EXAMINATION BY STAINING. Preparations of blood dried and fixed in a mixture of alcohol and ether are stained for a long time either in Kühne's blue or in carbol-thionin. The parasite stains with difficulty and shows nothing more than is seen in the examination of fresh blood.

SOWING AND CULTURES. On taking the blood at the approach of the convulsion; during the vertigo and the incomplete attacks among epileptics who show neither bitten tongues nor wounds of the skin, we have been able, in collaboration with H. Chausse, to isolate in sixty per cent of the cases the micro-organism observed in the blood.

The blood is drawn freely from the veins into tubes, of ordinary bouillon, neutral or alkaline. The tubes are placed in an incubator at 34°C. and can be examined at the end of forty-eight hours. The microbe grows best between 34° and 37°C. It is an aërobe. Its growth slackens in avacuum.

BOUILLON. After forty-eight hours in an incubator the bouillon is slightly changed and contains little flakes which are hardly visible. Little or no deposit. Reaction acid at the end of some time.

In the cultures examined without staining (Leitz, oc. 3, obj. 1-12) one sees cocci of 0.6-1 micron in diameter and mobile diplococci. Short chains composed most frequently of four, six and eight granules of the same size or less frequently presenting in their continuity or at their ends the polymorphous granules which have been observed in the blood. These chains also show undulations like those observed in the blood.

GELATINE. In stab cultures only a slight change which is scarcely visible is noticed along the needle track. Nothing is seen at the orifice. No liquifaction.

AGAR AGAR. Whitish spots, extremely fine are seen by transmitted light.

POTATOES. No growth is apparent to the naked eye although the microscope shows an appreciable growth.

The parasite shows in cultures the same staining reactions that it has in the blood. It is stained by hydro-alcoholic and aqueous solutions of the

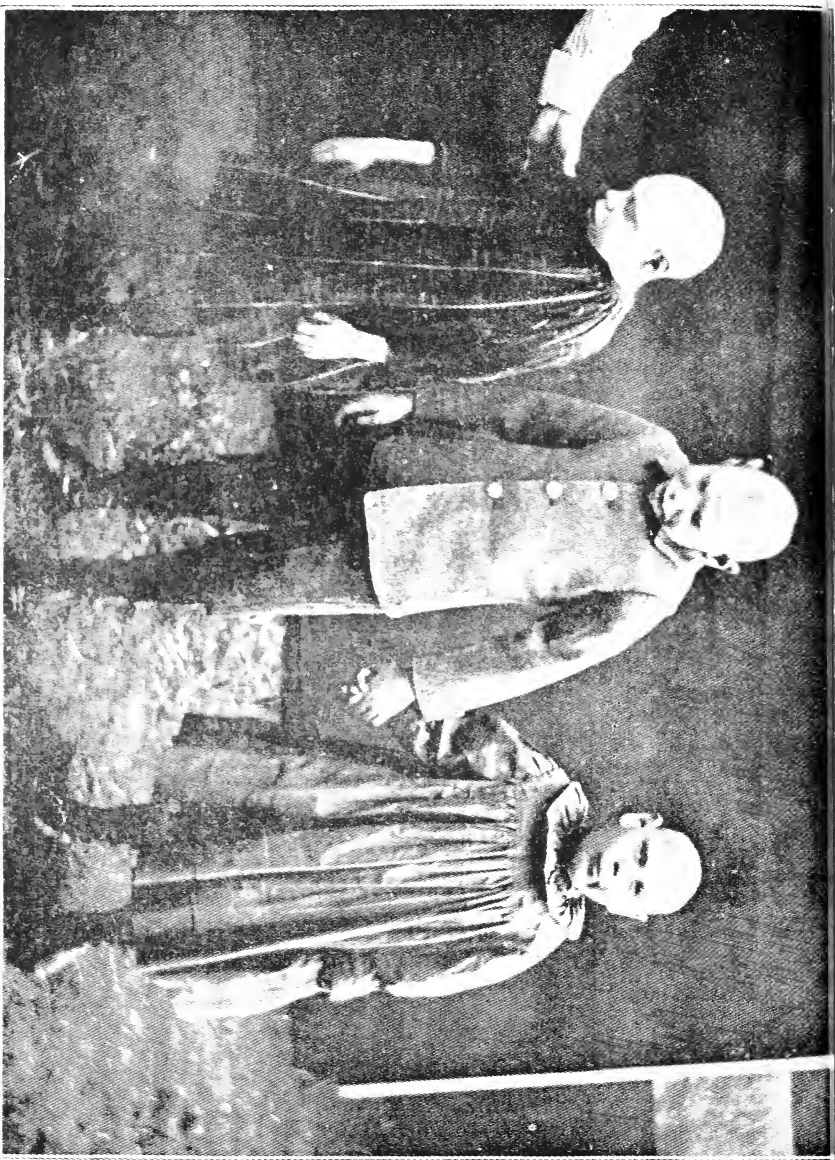
basic analine dyes.. It does not stain well by Gram's method. It is decolorized by the prolonged action of alcohol and takes the complementary color.

The interveinous injection of the culture in the rabbit produces the typical forms in the blood.

It appears to be a streptococcus which by its morphological and biological characteristics constitutes a special variety which we have found only in epileptics.

We propose to give later the results of our experimental investigations.

L. Bard reports a case in *La Semaine Medicale* for April 23d, 1902, of epilepsy and alexia which was operated on by trephining and resulted in that both epilepsy and alexia were increased. This, he thinks, was due to a traumatic epilepsy being added to the original. So he points out the danger of operations in such cases.



Group of Microcephalic Children

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ORIGINAL ARTICLES.

NOTES ON THE FAMILY HISTORY OF FIVE

MICROCEPHALIC CHILDREN

BY J. M. MURDOCH, M. D., POLK, PENN.

THAT hereditary influences supply factors of extreme importance in the etiology of microcephalic as well as other forms of idiocy is of course well recognized and in presenting the following history nothing more is intended than to place on record an additional case, feeling that we cannot have too much evidence along this line to place forcibly before the people, and especially our Legislators, the necessity of making ample provision for the segregation of defectives to prevent the procreation of unfit children.

The case I desire to report is that of a family in which there are five microcephalic children each with a head circumference of less than sixteen inches with the narrow and receding forehead, pointed vertex and flat occiput of the typical microcephalic.

These children are the great-grandchildren of a female imbecile who lived in a village in Western Pennsylvania in the early part of the present century and whom, for convenience, we will call Lucy X. It is a matter of record that this woman gave birth to four feeble-minded girls. These girls grew up in ignorance, were allowed to roam the neighboring country without restraint, becoming irresponsible victims of lust, giving birth to fourteen children, the majority of whom were illegitimate. One of these illegitimate children is the father of the five microcephalics under consideration.

Unfortunately I have been unable to obtain any definite history of the mother of these children, though there is reason to believe that she also is a descendant of Lucy X. The only definite knowledge in my possession in regard to the mother is that she is feeble in both mind and body. A neighbor makes the following statement in regard to the father: "He has a defective brain. He is a good enough fellow and a good worker, but seems deficient in moral perception, is very ignorant, cannot read or write, and seems un-

able to distinguish between truth and falsehood."

As to the five microcephalic children: The oldest is a boy of thirteen years, a microcephalic with epilepsy and spastic paralysis, unable to walk or feed himself, apparently devoid of the sense of taste, but with a ravenous appetite, of untidy habits and, withal, of remarkably good bodily health. The second, a boy of nine years, is an idiot of strong physique, with destructive tendencies, smashes everything breakable within reach, has to be carefully watched lest he inflict injury on the other children and, when corrected, will savagely endeavor to bite. He is completely devoid of fear, strives to catch every passing horse by the tail; in consequence, when at home, he was kept tied hand and foot the greater part of the time. The third, a girl of seven years, is the most intellectual member of the family. She can say the one word "mama;" all the other members being without the power of speech. She recognizes her nurse, for whom she shows a feeling of affection. The fourth, a boy of five years, is able to walk, but seems totally devoid of intelligence. The fifth is a mere babe and is also microcephalic.

The offspring of Lucy X. of whom there are probably more than one hundred, so far as known are defective. Many are to be found in Institutions for Delinquents and Defectives. The five children whose case is given by no means represent all the members of this family in our Institution.

The inference to be drawn from this history is very plain. Had Lucy X. been placed in a suitable institution where she could have been a helpful member and have passed a happy existence, at last passing away without issue, society would have been relieved of a tremendous burden and the State from the expenditure of a sum beyond computation, which it has spent and will be compelled to spend for the maintenance of her miserable progeny.



REPORT OF THREE CASES OF HYSTERO-EPILEPSY

BY C. H. HENNINGER, M. D. POLK, PENN.

In presenting a report of several cases of Hystero-Epilepsy, I will give as an excuse the frequent hysterical manifestations among our high grade imbeciles, usually in females, although the males are by no means exempt. In one case the condition was diagnosed as true epilepsy, and the patient subjected to an operation. The case that I have referred to was a typical case of the major form of hysteria or hystero-epilepsy. These cases, according to American authors, are rare in this country. The name hystero-epilepsy should not be used when speaking of the major form of hysteria, as it is liable to convey to many the idea that this disease is in some way related to epilepsy, and although the pathology is obscure in both cases, the final outcome of the two is so different that it seems as though we should lay more stress on the differential diagnosis. The temperature is not always a true indication for we have many degrees of hysterical pyrexia that are likely to be misleading, nor do we always have a perceptible elevation of

temperature in true epilepsy. You have seen hysterical patients subject themselves to various degrees of pain without any manifestations of discomfort and they do not always fall in places or positions to avoid injury. The duration of the attacks may not be prolonged beyond the average epileptic convulsion. And Kirchhoff speaks of patients having hundreds of attacks in rapid succession, a condition called Status-Hystericus.

CASE I.

C. A. Female, aged twenty years, single. Was admitted to the State Institution for Feeble-Minded, Jan. 30th, 1901.

Family History—Father addicted to the excessive use of alcoholic stimulants. Mother, neurotic and one sister suffered with some nervous trouble of which I was unable to ascertain the exact nature. The patient was the youngest child of the family, consisting of three girls and one boy. The patient states that they did not live happily, and that her father and mother separated when she was ten years old.

Personal History—At the age of fourteen she had diphtheria and states that she was very sick at that time, always had considerable trouble during her menstrual periods. Three years ago she fell down stairs, striking her head and receiving several scalp wounds. Following this injury, she suffered at intervals with convulsions resembling epilepsy. This continued for about a year and her nervous condition remaining unchanged, she was taken to a hospital and at the request of the relatives her skull was trephined. This failed to improve her general condition and it was then considered advisable to send her to some institution.

On admission she was found to be in good health, but slightly nervous and easily excited.

Physical Examination—The body well formed and well nourished. Head slightly microcephalic but no other signs of degeneration. On the right side of the head over the motor area several inches of skull had been removed during operation. From a physician, who was present at time of operation, it was learned that no abnormal condition could be detected in the skull or membranes and that the operation was simply exploratory.

Since admission she has had several attacks. The prodromata lasting for several hours, during which time, she is irritable and sits around in a dazed condition. At the onset she falls to the floor, loses consciousness, and during this period has clonic and tonic spasms. The second stage, or stage of contortions and grand movements, lasting but a short period, followed by an emotional stage during which she becomes very passionate. The pupils are markedly dilated and the position of the body indicates many emotional mental phases. The last stage, or stage of delirium, in which the hallucinations of sight predominate lasts for several hours. In a letter written during this stage she complained of being told that she was to be burned or shot and if she swallowed what was in her throat, it would eat herself away. Also stated that she was disgusted with picture-posing representing dialogues and other wonderful inventions. Thus completing the picture of a hysterical patient by adding her testimonial.

CASE II

R. S. Male, age twenty seven years, married and laborer employed in the Pennsylvania R. R. yards, Pittsburgh. While at his work he stepped on a plank and was thrown into the ash pit. Complained of severe pain in the abdomen and was removed to the hospital. Examination revealed but slight injury and the patient was put to bed. The following day, when he was drinking a glass of water, he was suddenly taken with a violent convulsion followed by a marked rigidity of muscles, especially those of legs, neck and jaw. This stage was followed by one of acute delirium in which the patient had delusions and hallucinations to such a marked degree that it was considered advisable to remove him to an insane institution.

These convulsions became quite frequent and the patient was transferred to the insane department of St. Francis Hospital. On admission, he was found to be in apparent good health, strong and muscular, well nourished and did not complain of pain and no injury could be detected. Whenever he attempted to drink he was seized with a violent convulsion during which he required mechanical restraint to keep him from injuring himself or attendants. This condition gradually became worse until the sight of water was sufficient to produce a convulsion. The fact that he was nervous and emotional, that the railroad company was paying his expenses, and the ease with which a convulsion could be produced, aided us in our diagnosis. In this case it is only of interest to state that the application of ice cold water externally p. r. n. was all that was needed to bring about a rapid cure. Also the marked delirious stage following the grand movements and that the case was diagnosed as insanity.

CASE III

N. D. Female, aged eighteen years. Family History: Father living and well. Mother decidedly neurotic. One brother subject to chorea.

Physical Examination: The patient was well formed; height, five feet three inches; weight, 130 pounds. The head showed facial and cranial assymetry, but the stigmata of degeneration was not marked. The deep reflexes normal. There were no areas of hyperanesthesia and no change in the field of vision.

Personal History: From the age of thirteen she suffered from severe convulsive attacks, irregular in their onset and duration, but aggravated during her menstrual period. Her mother stated that during these spells it required several persons to hold her in bed and as medication had little effect, she was advised to take her to a hospital for treatment. During these convulsions she presented many of the symptoms of hystero-epilepsy with marked paroxysmal state of reflex acts, the delirious stage being absent, but she was unable to concentrate the attention, was passive and apathetic to her surroundings. She was untruthful to a pitiful degree, and discontented, and soon became dissatisfied and left the hospital.

The pathology of these cases is obscure, but Berkley states that an incomplete or faulty development of the higher cortical centers concerned in cerebration is the most important condition found.

DISCUSSION

Dr. Keating: These are hard cases to manage and suggestions as to their treatment will be gladly received.

Dr. Wilmarth: I have one and I'd like to know what to do with her. She has intense spells of temper and we can do nothing but put her in a room and let her have it out.

Dr. Barr: Have you tried shaving off her hair? I have found that mixing the lather as if to shave it off even had a very good effect on a girl with whom we could do nothing. A girl will do anything before she will lose her hair.

Dr. Polglase: We have a girl who came to us as an epileptic. She had been treated by drugs galore and she gave us a number of specimens of this form of hysteria and assumed the epileptic type, as most of them do. She was imbued with the idea that she had been the victim of a surgical operation, which was not the case at all. The only treatment we gave her was discipline, for she was in good bodily health.

Miss Gundry: I had a girl of nineteen who had such spasms. She was very muscular and would get into the most dreadful tempers at the slightest provocation, especially if she wanted to go anywhere and was not allowed. If we put her in her room she would smash everything. She was given a hypodermic injection which broke up the thing. After that whenever she saw the syringe coming she gave up her spasms of temper.

Mr. Johnstone: I recall one case where she said it took four men to hold her. The first time she had an attack four or five of us tried to hold her. The second time we paid little attention to her and the third time she was allowed to have it by herself in peace, the other children passing out from chapel. I do not know what her subsequent history was.

Dr. Keating: I had a girl who had been treated in several places sent to me as feeble-minded and epileptic. Her father was devoted to her and remarked to me that if she did not improve he was going to take her away. I put her in school and watched her and she kept having these spasms and I saw that they were not genuine epileptic seizures and I told the teachers if she had another to send for me. Soon after I got a hurried message that B. was having a terrible spasm and that she had had three. I came up and said to the teacher, "Get the electric battery ready right away." The girl said, "It's all over now." The next time her father came I had the girl brought into an adjoining room and in a loud voice I talked about her with the father. I said, "If your daughter has any more spasms she cannot go home; she will always have to live here, but if she doesn't have any more spasms for six months you may take her home." That was before Christmas and the girl has not had a spasm since. She is a very nervous girl and hard to manage.

Dr. Henninger: In the hardest cases I think that heroic measures are justifiable after conservative methods have failed.

Mr. Johnstone: I have a little room, 6x8 with two screen windows and a screen door, built in the centre of one of the large dormitories and whenever one of the children gets in this condition I put him into this room. There is

nothing in the room and the shoes are taken off and there the child is left to himself and he soon cools down.

Dr. Barr: I had a boy who had outrageous spasms. He ran away, stole a bicycle and ran around the country for a day or two and at last I heard he was in Wilmington, Delaware. I brought him back and tried a good many things. Finally I put him in bed and kept him there three weeks on milk diet. I have had no trouble with him since. He keeps a record of his spasms which he carries in his pocket.

Dr. Keating: It is rare for any one to hurt himself in these spasms.

Mr. Johnstone: In one case that we had the boy occasionally had genuine spasms and I have always been afraid of some such thing again. He would begin tapping on desk with his fingers and walking around the room and we paid no attention to him. If he had a spasm we let him have it but on one occasion he got hold of a hot pipe and burned his hands badly.



DISCIPLINE

E. R. JOHNSTONE, VINELAND, N. J.

WHEN we remember the number of things parents fear when they bring children to our institutions the wonder is that so many are brought. Only the strong pressure of circumstances, the inability to care for them in the home, etc., forces many reluctantly to the point of bringing the child. The fear is great that this little child who has probably had the greater share of the mother's tenderest love and for whom every member of the family has sacrificed will now be among a lot of young ruffians who will abuse him and otherwise mistreat him, or that he will be placed with a lot of children of much lower grade. Almost without exception parents are sure that their child is brighter than any they see in its group. But the thing that is most feared is the methods of discipline that will be used. It is surprising how many intelligent people there are who associate tortures, dungeons and brutal restraints and punishments with the word institution, even at this late day, and the sensational press tends to foster this idea. "How do you punish your children?" is one of the first questions not only by the parent but by the visitor. Even on the application blanks in reply to the question,—What methods of discipline have been used? the few who say "whipping" are sure to add, "with poor results" or "it always makes him worse," so great is the fear of bodily harm to the child.

Even we, who see so much of it, can hardly appreciate how solicitous the parents of these stricken children are regarding this question of discipline, but the loving devotion which has kept the child at home altho the burden is almost impossible to bear, excites our deepest sympathy and because our discipline is founded on the most humane principles we welcome the question, knowing that a thorough explanation of our methods will relieve many anxious hearts.

The State of New Jersey in framing the new School Law this year has inserted a clause prohibiting corporal punishment and extending the powers of the law so as to include also all State and Private educational and charitable institutions. While I believe that there are certain rare cases when such punishment administered coolly and without anger is as efficacious as a dose of medicine given by the physician for certain forms of disease, still I think the law good, for in most institutions the power of corporal punishment is restricted to the Superintendent; in his absence he must delegate it to some assistant upon whose judgment, perhaps, he cannot always rely as upon his own. In institutions for the feeble-minded there are but few vicious children. It has been said with much wisdom, "If we knew all we would forgive all."

In considering the question it is well for us to glance for a moment at the way our employes view the matter of punishment.

(a) Some are not beyond the ancient idea that punishment is for revenge, getting even. The person injured is to be satisfied without regard to the one who has done the wrong. He must be paid back in full.

(b) A second class of employes hold the idea that a child is to be punished so that he shall not repeat the offence and that others will also be driven to good behavior by fear of like punishment if they do wrong. Many of our present laws are based on this idea. "We shall make this a lesson to him and to others," they say. I am reminded of Mark Twain's story of the boy who climbed on a high roof and fell and so injured himself that he was a helpless cripple the balance of his life, and people said, "That will be a lesson to him." The deterrent effect on others might be some good but the value to the individual is nil and after all it is the wrong-doer himself whom we must reach. In the minds of this second class then the one who does the wrong and the person wronged are secondary to the desire to protect others. The doctrine of eternal punishment is based upon this idea, also the idea of capital punishment.

(c) There is still another class of our employes, however, who realize that wrong doing is the result of disease or ignorance. The wrong doer himself is the one to be primarily considered and he is to be trained or cured. Herbert Spencer says that, "Punishment can be justified only in so far as it is educative, and to be educative it must never be arbitrary, but must be a natural reaction growing out of the wrong that has been committed." The indeterminate sentence laws which with the growing intelligence of the world are becoming more common, are based upon this idea that disease or ignorance are the causes of violation of law. The chief aim in all discipline should be to correct harm. Unfortunately this is too often not considered at all.

So much for the employe, let us look for a moment at the child's attitude toward punishments. Most of our children assume the same attitude as the first class of employes mentioned. "He hit me. I want to hit him back." "An eye for an eye." In nearly every case the aggrieved one must be satisfied not by having the wrong righted but by causing a like wrong to the guilty party. Studies upon a large number of children, conducted by Earl Barnes and Estella Darrah give the following conclusion. *"Young children under twelve ignore law, therefore rules should not exist in the discipline of the

*Studies in Education, Earl Barnes,--Stanford University, 1897.

school. Each infraction of the law of right and each act of disobedience should be treated on its individual merits."

Our discipline must be based upon the law of loving kindness. Perhaps the most effective way to keep good discipline is to provide occupation. A busy child interested in his work needs no punishment.

The institution life should be full of special privileges. If this idea can be firmly grasped by the employes to the extent that everything that a child is ever called upon to do is a privilege, means of discipline are always at hand. It is only a matter of depriving the child of one of these privileges. The child who doesn't make a bed nicely is not permitted to make another. Tommy gets that privilege now and if Willie "doesn't care" he is not permitted to make any to-morrow, but sits idle while the other boys do his work. It is this idleness that hurts. I have yet to find the child who has sense enough to make a bed who doesn't want to do it, if he finds all of the others doing it and he is constantly reminded that he cannot do it. Nothing so rouses the desire to do as to be told that we cannot do. With new attendants it is often hard to make them appreciate this fact but it simply becomes a question of who will hold out the longest, the child or the employe, and I have never yet known it to fail when the attendant persists. As this idea gradually worked out I often thought I had reached its limitations, but it still expands. It is no longer a mere theory, but the most practical method of discipline I have found.

The merry-go-round, the trip to the Zoo, the ride in the donkey wagon, entertainments, parties, club meetings, skating, etc. all form excellent means of discipline.

The Superintendent who makes it a point to speak to every child who addresses him can help the discipline a great deal by saying, "I cannot say good-morning to you to-day because you have done (or neglected to do) certain things," etc. We have several groups in which children of a certain grade may live only so long as they live up to a standard of behavior. Attendance at band or various of the shops or classes is only permitted while behavior is especially good and work in other departments well done.

Sometime ago there was presented to the Iowa Board of Control a paper on paying inmates of institutions and many plans were given. At that time our system was in its infancy. Since then, however, we have found it admirable and it may be of interest to outline it here. It is not meant to be payment for services rendered, but rather as a method of discipline and we find that not only are children working cheerfully, well behaved, but also that well behaved children usually do good work. We pay a number of our children each week, amounts varying from one to five cents. Each child brings from every department in which he lives or works, a credit slip which signifies that he has worked well or behaved well for the week. No slips of discredit are given—the lack of a slip signifies that the child has not been good, etc. He is not told that he gets no slip because he was bad, but because he was not good. There is a vast difference in the two ways of putting it.

If A. works in the Laundry and Shoe-Shop and also milks, he must bring four slips, one from each of the above, and one from his attendant. If

his allowance is three cents per week and he comes with only three slips, then he gets three-fourths of three cents (two and one-fourth cents). We can use fractions of a cent because candies, nuts, etc., are sold so many for a cent.

Each Saturday night in one of the rooms a table is tastefully arranged with candies, nuts, ribbons, etc., etc., and the children come in groups to buy. This, coming as it does once each week, keeps the training idea constantly before them. The children's interest does not seem to lag. The whole thing is an excellent means of breaking up small habits and helps general discipline wonderfully.

Encouragement must be at the bottom of all lessons. Our employes must learn not to say "don't" if they will succeed in their discipline. Down through the years, mankind lived under the rule, "Thou shalt not" until Christ preached the Gospel of encouragement when he said, "Thou shalt." The successes of a child must be noted rather than the failures. Let the blue pencil and the colored chalk mark in all lessons the correct thing and then instead of finding their pages marked with failures, each mark dragging the discouraged little soul deeper in the mire of dissatisfaction, they will bristle with approbation and encouragement and brighter faces and happier dispositions will result. It is scarcely realized how much wrong doing on the part of the child is really caused by a headache or an attack of indigestion on the part of an employe. A quiet voice, an even temper, pretty and clean surroundings, good ventilation, encouragement, employment, everything a special privilege, these are the requisites for good discipline.

I am sorry I cannot recall the name of the author of the following lines, but if the spirit contained therein is kept in the hearts of those who have to do with feeble-minded children, they will not go astray.

"My little son who looks from thoughtful eyes,
And moves and speaks in serious, grown up wise,
Having my law the seventh time disobeyed,
I struck him and dismissed
With harsh words and unkissed;
(His mother, who was patient, being dead.)
Then fearing lest his grief should hinder sleep
I visited his bed
And found his lashes yet
With his late sobbing, wet.
Then I, with moan,
Kissing away his tears, left others of my own,
For on a table, drawn
Beside his bed, he had placed within his reach
A box of counters and a red-veined stone,
A piece of glass abraded by the beach
And six or seven shells,
A bottle of blue bells
And four French coins, ranged there with careful art

To comfort his sad heart.
So when that night I prayed
To God, I wept, and said,
'Ah, when we lie at last with trance'd breath,
Not vexing thee in death
And Thou rememberest
The toys
That made our joys,'
Then, fatherly not less than I
Who am moulded out of clay,
Thou'lt leave Thy wrath and say,
'I will be sorry for their childishness.' "

DISCUSSION

Dr. Rogers: I think this is a valuable paper and the spirit is excellent. It is always a delicate matter to discuss this subject of corporal punishment, we are so liable to be misunderstood. That corporal punishment is sometimes necessary is a point upon which we will all agree, yet, as a general statement, I do not believe in corporal punishment. I have found cases in my experience where I believed it was absolutely necessary. I do not allow any person to strike a child. If I know that it is done I discharge the employe unless it is done in self-defense. I do not recall more than two cases of the latter kind, both being cases of attack upon the attendant by boys with articles of furniture. I believe there should be rigid rules for the protection of the management and they should be understood. The first is that if there is to be any punishment it should be given by the superintendent and by no one else. I carry that out rigidly. I know there has been much trouble in some institutions that has resulted from delegating that power to others. Another point is that if a case is reported where severe discipline is needed it is important that it shall not be administered at once. It can always be postponed twenty-four hours. It is an interesting fact that we may view the situation very differently after a few hours reflection. In that time the child may be honestly repentant and need no punishment. I think the public should understand these rules. The only real trouble I ever had over severe discipline was when I whipped a boy and neglected to inform his parents. The boy informed the parents himself. I believe I did the proper thing for the boy, but I should have told them. He was a great strong boy physically, and had simply domineered over his associates—farm boys—and his attendants, who were forbidden by me to punish him, until the limit of forbearance was reached. His mother insisted upon taking him home. I said that I would like to have the boy taken before the board of trustees and let them see what had been done and hear the reason and then if she cared to take him home it was all right. This was done and the boy went home. A week later I had a letter in which she said she would like to return him under certain conditions. I replied that he could not be returned under any

conditions except to be treated as I thought best. Within a month she sent him back under my conditions and he has been a splendid boy ever since. That is a typical case where I believe punishment was required. He came from a home where there was no control. In fact, I understand, he pounded his mother during the time she had him home after my punishment and I presume this treatment was a powerful argument with her in my favor. It is an extremely rare case where corporal punishment is required. Mr. Johnstone expresses the proper spirit in relation to our children.

Mr. Johnstone: The general public would not approve of whipping a feeble-minded child.

Dr. Wilmarth: We should never whip a boy unless we are sure it will be for the child's good. It is not a question of defying public opinion. I do not think we should ever whip a child.

Question: Do you think you should always notify the parents in advance?

Dr. Rogers: If I could not do it before I would do it at once. I should notify any parent who took any interest in his child. I believe frankness is due to the public and to the friends. It may make resentment for a while, but the community will see the justice of it and that establishes confidence in the institution.

Mr. Johnson: I think as a matter of policy it is a great mistake for a superintendent to do it himself.

Dr. Rogers: I believe it is a responsibility the superintendent should take. I believe no one else should do it. It is the most disagreeable thing and the very fact that he takes the responsibility will make it a thing of seldom occurrence. It is the most disagreeable thing I ever did in my life.

Mr. Johnson: I think he should delegate it.

Mr. Johnstone: I ordered it done once by a person in whom I had confidence and I found afterwards two other punishments by the same employe under circumstances he thought justifiable.

Dr. Rogers: I had the same experience where I deputed minor punishment.

Mr. Johnson: One has to be careful in delegating punishment of course. I once had occasion to tell an attendant to punish a boy who had strayed away by giving him a bath and putting him to bed. It was Thursday. On Sunday he asked if the boy were to go to Sunday school. Inquiry showed that the boy was still in bed. His only excuse was that I had told him to put the boy to bed and had not told him to take him out.

Dr. Keating: When a child is brought to me for admission I make it understood that I am to have authority over the child. If I see fit to give corporal punishment I must give it, and I have yet to find the slightest opposition on the part of the parent. I am opposed to corporal punishment, but I reserve the right to administer it. I do not recall but one case where I ever resorted to it. That was a runaway. He told the neighbors that if he were caught I would give him a thrashing, and I told him that if he ran away again I *would*. The boy did not go for six months. I thought he had forgotten what I said, but when he was brought back I asked if he recollected. He replied, "Yes, you said you would whip me." I said "I am very sorry to do it, but I am a man of my word," and I got a switch and whipped the boy and

he has never run away since. While I am opposed to it, if it must be given it should be given only by the head of the institution. If an employe or any subordinate officer administered punishment without my permission his resignation would be immediately asked.

Dr. Rogers: I do not believe that a person can administer corporal punishment without injury to himself. It is a matter of history that one who is placed where he is obliged to administer corporal punishment feels that it has a thoroughly demoralizing effect upon himself. Prison managers admit this.

Dr. Polglase: I never thought of it in that way.

Dr. Rogers: He can not do it without injuring his moral nature. I think this consciousness would deter a man many times.

Mr. Johnstone: My first experience in corporal punishment was in a reform school where we all used a strip of rubber about the size of my thumb. The first time it shocked me. I was pretty young at that time. At the end of two months I woke to the fact that it did not mean anything to me to whip those boys. I was no longer shocked. I feel pretty strongly now and I would not like ever to get into that condition again. The demoralizing effect on myself was something awful.

Dr. Polglase: I think the times for corporal punishment are very few. The longer we live with these children the more we distinguish certain types. There are the children who are cruel and bloodthirsty and when a boy attempts to burn up a building or do some cruel thing I think a dose of his own medicine is all right for him. Dr. Keating has spoken of runaways. I do not think whipping is a deterrent for them. If a boy has assumed a false dignity among his fellows and falls from his high estate and does something deserving of punishment I should put him at some manual labor that he dislikes. Every boy should feel that you are sorry to administer punishment. I have one boy who runs away and no punishment would have any effect upon him. It is an impulse that he can not control. I think nothing would stop him unless he were tied. So I keep him constantly in dresses. He will not run away with a girl's dress on.

Dr. Rogers: Another point to be considered in handling young people is that there is a period in the boy's life when he assumes a spirit of bravado. That is as true among feeble-minded boys as among strong-minded. It is an age habit. The boy if wisely treated will outgrow that.

Mr. Johnstone: I do not think our discipline should consider the idea of punishing for the offence committed but to prevent its being done the next time. Do not let there be a next time. Whatever is done should be with the idea of making the boy better, so that there will be no repetition of the offence. Whipping for the offence lasts only as long as the smarting lasts.

Dr. Polglase: We had a boy whom we trusted to do many things and he ran away. We gave him some slight discipline, deprived him of dessert or something of that kind. He ran away a second time. He had a great aversion to working inside the low grade buildings and had a contempt for that class of children. He was told that if he would do such things he must mingle with them and I put him there to work. I do not think there was ever a more humble individual. He begged time and again to be taken out

and after I thought the dose was heavy enough I let him out and put him to work. He may run away again; I cannot tell anything about it, but in the meantime I trust him. When I trust I trust fully.

Dr. Keating: If you punish a child by giving him a disagreeable task and he refuses to do it what punishment would you give for that?

Dr. Polglase: I do not know that I have ever had such a case. I should not force him to do it at once.

Mr. Johnstone: Hasn't it a bad effect on the boys who do that work regularly to have their employment looked upon as a punishment? Why should not they say, "Why must I do this every day when I am good, if it is a punishment for a bad boy?"

Dr. Polglase: It would have a bad effect unless you made an explanation.

Mr. Johnson: We say to a boy that he has proved by his conduct that he is not in the right place for him; that he belongs in division "Six" and so in he goes. If I want to be very forcible I have his clothes marked "6."

Dr. Fernald: Is not that the best way, simply to transfer them to a low grade department without any words? Let them draw their own inference. That takes the bravado out quicker than anything else. In regard to punishing feeble-minded boys I never could see why we had any moral right to administer punishment to a feeble-minded boy more than to an insane person. In no country in the world would corporal punishment be tolerated for the insane. Presumably the mistakes of the feeble-minded are due to mental irresponsibility and is it not unfair to punish them for that? It is a short cut, there is no question about that, but I never have been able to see the difference between them and the insane in that respect.

Dr. Wilmarth: If punishment is to improve the child why should you not punish him as you would your own children?

Dr. Fernald: That would apply to adults.

Dr. Wilmarth: It is to strengthen the child's will. When it is done in a kindly spirit, a just spirit, a spirit of love toward the child and solely for its good and the child so recognizes it then it strikes me that punishment is justifiable.

Dr. Rogers: There is all the difference in the world between the adult and the adolescent. Penologists have agreed that with very rare exceptions it never pays to whip an adult, while it might be beneficial to whip a child. When we speak of an insane person we refer to an adult.

Dr. Fernald: Nothing hurts an institution more than to whip an inmate.

Dr. Keating: The errors committed by the insane are from delusions. I do not think the infraction of rules by boys is from delusion; it is usually from *cussedness*. Why should you not punish a *boy who knows* that he is doing wrong? In the case of the boy I whipped it hurt me more than the boy and I think that impressed him. I did it only as a last resort.

Dr. Simcoe: My observation has been that there is as much whipping in insane asylums as in feeble-minded institutions. The employes do it. I have had four years' experience in a State asylum for the insane and I dare say that there is more punishment going on in insane asylums than the superintendent knows nothing about than ever was in a feeble-minded institution.

Mr. Johnstone: You may not know how much is going on in the institution of which you are superintendent.

Dr. Simcoe: I am a firm believer in not letting institutions get too big, for a superintendent *cannot* know what is going on in a big institution. I was raised in an insane asylum town and I knew what was going on when I was growing up.

Dr. Rogers: After all I think we agree on the essential points. An *irresponsible* person, be it child or adult, should certainly *never be whipped*. It is only in those rare cases in our work where we recognize responsibility, and then only as a last resort, that it should ever be employed. In the case I mentioned there had been months of patient effort, and a variety of minor methods of discipline employed without avail before the dose was administered.



TRAINING A SPECIAL SENSE.

MISS ALICE MORRISON, VINELAND, N. J.

EVERY one who, when given a task to do, accomplishes it with a reasonable amount of satisfaction, feels perhaps that their's is the best way of doing it. I do not say so nor even think so, but I do know that under our method of teaching I have received very good results.

Two years ago I was given a speech class composed of the apparently Deaf Mutes of the N. J. T. S., those children whom we believed could be benefited by a thorough course of training. It is of three of these children and their progress that I wish to speak especially.

One girl, Elizabeth K., entered the Training School in '97 from the School for the Deaf at Trenton, which reports,—“At times the child seems to hear, at times to be deaf, perhaps her hearing varies.” For some time after her admission she made no attempt to speak, making only animal sounds, and as far as we could tell did not hear at all.

George E. was admitted in '94. He could mumble a few words which could be understood only by those who were well acquainted with him. He seemed to *feel* sound, but not to hear it.

Isaac C. was admitted in '98. He could not talk and made no attempt to and apparently could not hear.

When definite work was first begun with these children in the spring of 1900, it was evident that for lack of special training those who had been able to mumble even the least bit intelligibly or receive any impression by means of sounds had become to all intents and purposes absolute Deaf Mute. Work was begun along the line of special sense training. Knowing that the training of any one sense strengthens all of the others or the training of all the senses but one would strengthen that one, we set out to train hearing through sight, touch, taste and smell. Until the end of that school year practically no direct effort was made to have these children either hear or speak. They separated materials of different odors, classified substances according to

taste, matched colors and forms, etc., etc. Everything possible was done to strengthen the senses other than hearing.

When school opened in the Autumn they were ready for special work along the line of hearing. For the first half of the year the training of the special senses was pushed vigorously. Three days each week were devoted to hearing and speech. When I use the word days, I mean the period during which these children came to my class, i. e., 45 minutes each day, the balance of the time was spent in other school-rooms or industrial work. Before the middle of the year, Isaac could hear such sounds as loud music, sharp, quickly spoken words. George and Elizabeth could hear loud and distinct tones only through the ear trumpet. Neither of them had tried to talk and could not articulate. Even in laughing or crying they made no sounds. Isaac, however, was trying very hard to talk.

Now what I wish to tell you is how, in the last year and a half, I have been able to teach these children so that today we no longer regard them as deaf mutes. I have in my school-room a large "Primary Reading Chart" which consists of pages about three feet long and two and one-half feet wide. On these pages are large pictures of dogs, cats, foxes, etc., with their names plainly printed around them. Each morning when we assembled for our lesson we sat around the chart. I would give the child the trumpet, then place his hand on my throat; then pointing at the picture of the man, perhaps, would at the same time speak the word "man" into the trumpet as loudly as I could. At first Elizabeth and George laughed as if it tickled, or was pleasant, then they began to move their lips as they saw mine move, but no sounds issued. After a time, however, they began to make slight sounds and about this time I noticed that when I spoke a word as loudly as I had at first, tears came to their eyes; so gradually after this I stopped using the trumpet, finding that as they improved in articulation they correspondingly improved in hearing until it was possible for me without the trumpet, and by speaking about one-half as loud, to make them hear as well as they had at first with the trumpet.

As previously stated when they first began to imitate me, no sounds came, then slight sounds, until finally they could say "man" plainly, and the day when they really said "man" plainly was for them a victorious day. They laughed and were thoroughly pleased. After this they seemed to grasp what was wanted of them and so tried with all their power. As soon as we knew "man" we took up in the same manner, dog, boy, fox, etc., often being aided by the real cat or dog passing our window, or in the room, or by a trip to the Zoo or barn; and I will say right here a child will learn the name of an object about three times as quickly if he sees and handles it rather than its picture. Then we began to name objects in our schoolroom, also to read and write their names until when I gave Elizabeth a piece of crayon and pointed to my table she would go to the board and write "table" pronouncing it as soon as written, or when I said "table" she would write "table" immediately turning and pointing to it. Special stress was laid upon their food, articles of dress, individual toys, etc., for they seemed to take a particular delight in naming their "friends." It was necessary often to blindfold these children to keep them from using their eyes and reading from each other's lips in-

stead of listening for words. It was also very hard to realize that although they had a very large sign vocabulary, they had practically no oral vocabulary.

The evolution of the primitive language of these children to their present knowledge of words would be of interest and perhaps value to the philologist. When Isaac first learned the noun "stool" it meant not only stool, chair, bench, etc., but it also meant to sit. All of them when they learned the word "bite" used it until they learned to differentiate, to mean the entire act of eating, or any article of food. After teaching a great many words, nouns mostly, I began teaching verbs. I chose the verb "run." First I had them run, then I wrote run on the board, then I had them form r-u-n, phonetically with their lips, then say "run" as plainly as they could, after which I had all the children run, thus making the word run a sort of a game until in a short time they knew run, to speak, write, hear and act. In the same way they learned hop, skip, jump, etc.

Following verbs came pronouns. We took up just those we use most, I, me, my, you, your, etc. I taught pronouns in about the same way as nouns, for instance: "You run," pointing to a certain child when I said "you," or, "I run," pointing to myself when I said "I." After saying it over and over again and also writing it all kinds of ways, the child really knew "you" and "I" and also the rest of the pronouns. Yes and no came very easily as the children understood the signs nodding and shaking their heads, thus making it easy for me to say "yes" nodding my head or "no" and shaking my head. The children seeing that the sign and word meant the same, very soon said "yes" and "no" without the sign. The articulates a, an, and the, came naturally after a few times being told about the position of the tongue when saying th, ch, etc.

These children can now count to fifty right plainly, can read almost anything on my chart and call a great many objects by their right names. Isaac especially calls nearly everything by its name and failing to make you understand what he says, will spell the word. To-day these children are wonderfully improved. Isaac leads, George comes next and Elizabeth last. Isaac is quickest, George articulates most distinctly and Elizabeth is one of the most anxious to learn, but her voice seems to drop back into her throat somehow and there is not quite as much brain to work with.

When these children are real happy they succeed much better. One day last week a little boy crept up behind me to put flowers in my hair. Elizabeth, Isaac and George, thinking I did not know, began to laugh. They laughed right heartily. Previous to this their voices had been husky, but afterwards their voices were quite clear and they could articulate much better.

A good laugh seems to clear these children's throats more successfully than anything else I have found. C, K, Q, X, and Z, and 3, 13, 23 are particularly difficult sounds for these children to make.

As was said above this work is based upon the theory that any sense could be trained by training all of the others. The general, special sense work has been continued more or less throughout the entire time.

Small adenoids have been removed from the girl's and quite a large one from the boys' throats.

DISCUSSION

Dr. Rogers: This seems to me to be a valuable contribution to our literature. I have found in my experience that it is difficult for teachers to tell in papers exactly what they are doing with their children, but I think we have to look to the practical work in the school-room for the basis of our progress in the training of these children. When we hear a teacher tell exactly what she has done with her children, what methods she has employed and what the result has been, we have something definite to serve as a basis from which other teachers can work. I wish that we had more such reports. Our school-rooms are rich with material and that ought to be put in shape for the benefit of the profession.

Mr. Johnstone: There were eight in that class. Those three made the best progress. Two made practically none and the work for three years has been of no value that we can see. With all the rest there has been some advancement. Now we hardly consider them as deaf mutes. No one permits those children to talk with signs and no one is supposed to make any signs to them when talking. The employes usually fold their arms when talking to them.

Dr. Keating: I agree with Dr. Rogers that much knowledge of the children can be gained from the teachers, often better than in any other way. I know that their time is fully occupied, but we are all working in a common cause and if we can get more such papers they will be listened to with interest and pleasure. Papers from teachers are eagerly sought in making up the program.

Dr. Rogers: I think superintendents would give a few half holidays for such work.

Dr. Keating: I told my teachers I would give a week off.

Mr. Johnstone: When I suggested this paper it was given with the idea that it could not be done. It should be a question not of what they can do, but what they must. After it is done they will be glad to have done it.

Mrs. Wright: I have a boy in my care who used sign language, but I have been taking special pains to teach him to speak words. He seems to be a bright boy. He writes and spells and has learned to read so that I can understand almost every word.

SECOND SESSION

Dr. Fernald: I have been specially interested in sense training. I believe that definite training of the senses has a great deal to do with developing the power of attention and observation. I think that the much neglected senses of taste and smell are specially valuable with the feeble-minded child of the lower grade. We have always made quite a point in developing the sense of smell. We find that many low grade idiots whose attention it is difficult to obtain in any other way are interested and will pay attention to varied stimulation of their sense of smell, using first familiar things and afterwards some more powerful perfume, chemical or drug. We have one boy whom we tested with various odors, apparently without any response, until he

was given a bottle of strong ammonia and that interested him. It was so powerful that I could not put it anywhere near my own nose, but it gave him great pleasure. It seemed as though he were using his sense of smell for the first time. He was afterwards taught to recognize comparatively slight differences of smell.

Mr. Johnstone: For the sense training in our school we are indebted to Dr. Fernald. The advantages of such training are easily seen in the school-room. I think it is even more important to train the sense of taste.

Dr. Fernald: In training the sense of smell you compel the child to experience sensations. He may not be able to make comparisons, but experiences the sensation. With the sense of taste he can tell you that molasses or sugar or salt is sweet or sour or bitter or good or bad. His powers of description are increased. It is a direct way of getting at what is in the mind of the boy. If the special senses are at the basis of our knowledge, as they are, it seems logical to begin by a definite exercise of those faculties. That is true of the sense of touch. One of our exercises is to have a bag with a pucker-string and fill it with different things, a lead pencil, a piece of stone, sponge, etc. The child puts his hand into the bag and has to use only the sense of touch to discriminate and from that alone he must make up his mind what he has found. You thus compel the boy to use judgment and the one thing the feeble-minded boy is deficient in is the power to judge. So by isolating one sense and exercising it you are aiding in the discipline of the mind. I believe systematic and long continued exercises of the special senses ought to go on with motor training and that both sense training and motor training should be carried to a great extent before scholastic training begins.

Mr. Johnson: We have a good deal of sense training, in teaching the children to discern color, odor and form.

Dr. Rogers: That is for higher grade children.

Mr. Johnstone: I have often wondered whether children of a higher grade would not benefit from this sort of training if carried into their classes and made a part of their work.

Dr. Rogers: That would be necessary where the special senses are dull.



PLEA FOR EXPERT PSYCHOLOGICAL INVESTIGATION

MISS MARGARET BANCROFT, HADDONFIELD, N. J.

IN THIS paper I wish to emphasize the fact that our schools for mentally deficient children and institutions where diseases of the brain and nerves are treated need the services of an expert psychologist. To many of us the study of psychology seems like something in the distance, remote from our interests; we do, to be sure hear of it and read of it in connection with child study, but we vaguely wonder what its use can be in our work. Nor is this surprising; for until the last generation, psychology as we now understand it, the introspective and experimental study of the mind scarcely

existed at all. Formerly, if given a man's philosophy, one could easily determine the type of his psychology; but the study of psychology is now no longer an appendage to philosophy. It has its own specialists and their work is every year becoming more and more important to every body, but above all, to teachers, and among teachers, we, in particular, must resort to the psychologist for help in our problems; for none have more diverse and perplexing minds to train than we.

A principle of unity always involves diversity of expression. We know from ordinary life how much individuals differ one from another. Characteristics are present in some cases which are lacking in others. Thus for instance, one individual is sensitive and responsive; another is callous and cold. The mind of one may see something new or grotesque or wonderful in the most ordinary things, while it may be that the thought excited in the mind of another by the same things are merely accurate and prosaic. Now in your work and in mine it is just this psychological difference that we must take into account, and reckoning from what is the probable normal standard of each individual, we must determine his degree of inferiority, and then begin to build up to that normal. In other words, we must resort to comparative science; nor can we doubt that the results in our own field will be as wonderful as they have been in history, ethics, and biology.

But how many of us are using strictly scientific methods? How many of us realize that our own particular work comes quite within the range of scientific study? As has been well said, "the field of science is unlimited; its material is endless; every group of natural phenomena, every phase of social life, every stage of past or present development is material for science. The unity of all science consists in its method alone—not in its material." It is this method that is universal to science, which, I urge, should be more extensively applied in our training of the human beings under our care.

If my suggestions seem radical, seem to involve much by way of innovation, we should remember that one of the most remarkable features of modern progress is the extension of the material science "into regions where our great-grandfathers could see nothing at all, or where they would have declared human knowledge impossible. Where they interpreted the motion of the planets of our own system, we discuss chemical constitution of the stars, many of which did not exist for them, or they were beyond the range of their telescopes. Where they discovered the circulation of the blood, we see the conflict of living poisons within the blood, whose battles would have seemed to them absurdities." Great as the advance of scientific knowledge has been it has not been greater than the expansion of our scientific horizon. The material of science is co-extensive with the universe; and the limits to our perception of the universe are only apparent, not real. Realizing this, we should certainly further the advance of science by using its methods in our study and training of the mentally deficient entrusted to our charge.

As things are now, we seem like so many ships at sea. We have gone over the course many times yet the dangers of the voyage are still manifold. No captain, however gifted he may be, will fail to welcome with delight any new invention of the men of science that may make his navigation more secure. Every lighthouse, even every one of the little buoys that mark the

channels off the coast is highly prized by him and most carefully guarded by the government. Not long ago, I was on the ocean on a dark and stormy night. About two o'clock in the morning, looking out on the vast expanse of water, I could see nothing save here and there the whitecaps as they dashed madly up and seemed to be fighting to get possession of something. Suddenly the searchlight flashed out and disclosed only a few rods ahead of the great swift ship a tiny fishing boat. What a lesson this incident had for me. I realized as I never did before what advance in science means in this world,—one of its inventions had saved this tiny craft and its freight of human life.

What do we want of science? We want the great searchlights of science and of knowledge from our Universities thrown into our schools and our asylums, the knowledge that comes from painstaking scientific research. That which has done so much for others must do as much for us. If we secure the co-operation of the expert psychologist in our work, superintendents, teachers, attendants all must greatly profit. How then shall we do this? We can appeal to the states for appropriations which will open each state institution to the trained psychologist.

We have not advanced beyond the letter A, in the elimination of mental diseases. We have not made strides. We have not trained scientifically. If we would not be termed fossils, we must advance with the times.

There is a further question before us: How shall we secure the best results from psychological examination? It has been suggested by Miss Jean W. Cox, of the Haddonfield Training School, Haddonfield, N. J., that all schools in the country make use of a uniform blank for all their pupils. If a pupil leaves one school and seeks entrance at another, a copy of the form shall be sent with child. This would save a waste of the child's time and of the teacher's energy.

The same thing might be done in connection with our defectives. To get a rough idea of the form, take, for example, a child normal in vision, very defective in hearing, with tactile sense good, but with almost no sense of taste or smell. We might mark such a child: Vision 100; hearing 50; touch 90; taste 10; smell 10; general average 52. With such a form filled, kept regularly and scientifically from week to week, we should know how the child was progressing as to its sense organs. This form would be an invaluable help to our neurologists who attend our children. If one of your children comes to me, all I need to do is to look over its chart, and I at once call the attention of the neurologist to its deficiencies. Then we should not work in the dark. To devise such a system I would suggest that a committee be appointed from our institutions, let us say a committee of five, to confer with three of our foremost experimental psychologists. If Dr. Münsterberg, Dr. Witmer, and Dr. Baldwin would consent to be of this committee we would have a form arranged which would be of incalculable value to us all. Under this system, each child should be examined at least twice a month, preferably once a week. This could be done only by having our teachers trained to assist. This training would make better teachers and give a character and significance to our work which is at present lacking. It would also show the progress that we made with our pupils. Each year we could publish reports with exact scientific data, stating the causes, where found, and the supposed reasons for

results from such causes.

The matter contained in these reports should also be made the subject of of papers, written in popular language, and sent out in a way to reach women all over the country. These papers should be brought before our mothers' meetings. The reading of these will of necessity arouse the women to the need of a scientific insight into the subject of child-bearing, and we feel, would in time produce practical results. This is looking forward far into the future, but what a grand thing it would be if you and I could be the means of impressing on the mothers of the coming generations that,

"Faults in the life breed errors in the brain

And these reciprocally those again;

The mind and conduct mutually imprint

And stamp their image in each other's mint"—

if we could impress this so forcibly that care for the future would banish thoughtlessness from the present and the new generation would advance toward a perfect goal, we would have done what we could.



"*OPEN THE WINDOWS—LIGHT AND GOD STREAM IN!"

MISS MARY BLACKWELL STERLING, ORANGE, N. J.

WITH the many resources of the grounds at the Seguin School, with the Park but a few minutes' walk from the house, and with the possibility of having for the children whatever will benefit them or give them pleasure, the task of entertaining them out of school hours is an exceedingly interesting one.

The governess who comes fresh to her work at three o'clock, has not the constant strain and discouragement of the teaching to contend with, yet is her duty of caring for the children during their play hours, one that is full of difficulties. In order to give commands and administer reproofs wisely, infinite patience and unfailing tact are necessary. There are ruffled feelings to soothe and disputes to settle amicably; there are individual children to be watched constantly in order that their play, which is often half-hearted and mechanical, may be enlivened. There are the troublesome ones to look after, those who have to be restrained from interfering with the rights and pleasures of others.

Undoubtedly, defective children are more easily entertained, are satisfied with fewer playthings and tire less quickly of them than do normal children, yet their play besides being a mere recreation time is a most important supplement to the school and should be carefully directed. The games, played out of doors in the fresh air where there is ample space, result in a freedom which cannot be obtained in-doors. The imitative games and games of skill and grace, quicken the imagination; rouse the mind to think and to act,

*Report of work carried on out of school hours at the Seguin Physiological School, September, 1901, to June, 1902.

and teach the body to serve the mind promptly and well; they lead to creative games. Thus, all unconsciously through their play, the children are advancing in physical, spiritual and intellectual development.

The ever-changing world of Nature with its wonderful transformation in the spring and autumn, cannot fail to excite in these children a love for the beautiful, a reverence for life and law, and a sense of deep thankfulness towards the Creator of it all. It is during these hours of happy play, when they are so near to the heart of Nature, that the æsthetic side of their lives—which the more practical duties of the school-room must of necessity crowd out—is being slowly, but effectually developed. Stories, poems, pictures and music, will broaden and make more definite the impressions gained, and the threefold reconciliation to Nature, Man and God, will be brought about at last, if only in part.

In their play hours, the children are divided into different groups, so that during the week they may enjoy each one of the many amusements planned for them.

THE YARD SET consists of those children who are unable to go any distance from the grounds unless for a drive. There are express wagons, go-carts, balls, bean-bags, reins and jumping ropes for the younger ones—rakes in the autumn and shovels in winter to be enjoyed by all—while the older ones when in the yard, play tennis, croquet and tether ball. On Saturdays and Sundays and in the mornings before school when the children are together in the yard, they usually unite in Kindergarten games of which they are all very fond. Sometimes, "Hide and Seek" is in favor; or an improvised fairy game or game of the Knights, which always meets with their approval and hearty coöperation.

THE WALKING SETS are two: A group of older children and a group of younger ones with perhaps a few older ones along to help. Often the so-called "babies" are included, riding in their go-carts, when the privilege of wheeling them is eagerly sought. Very tenderly are they cared for; rough places in the road are avoided and objects of interest pointed out to them by their young guardians.

The walks in Orange are numerous and attractive; even in winter the sky undergoes so many lovely changes that it compensates for the general desolateness. In the spring and autumn there is splendid opportunity for Nature study as the birds are numerous and flowers abound.

Trolley rides to some of the near Parks, or up the mountain are frequent treats. On rare occasions, when a child's birthday is coming, a trip down town is made and a little shopping done. This, besides affording them a great deal of pleasure, has its practical side, as those who are efficient in calculation, pay for what they have purchased and count their change, with little help. Sometimes soda water is indulged in; candy, however, is rarely purchased, although the children may have whatever is sent to them and enjoy sharing it with their companions. The candy and crackers or any dainties that come for them are often saved for the "Tea Parties," the event of rainy days, when after school, the children assemble in the gymnasium where with doilies and toy dishes several small tables are set by the skillful. It is an amusing sight, a table after a boy's setting! But they are so eager to

help that one is glad to initiate them into the mysteries of the correct placing of cups and saucers, etc.

Hostesses, also hosts, are then chosen, who in turn bow before those whom they wish to invite to Tea. It is their duty to pour the tea, which is, as a rule very well done. Points of etiquette are emphasized to hostesses and guests, that they may conduct themselves properly when away from school. These "High Teas" last about an hour, after which the children play a few games, then group themselves about the piano to sing their favorite songs. Incidentally, the dishes are washed and put away.

While the weather is mild the children remain out of doors after school until half-past five. During the many warm afternoons in September they sit in the Park when some of the girls like to crochet wash-cloths. Others like to play with the tennis racquets and balls which are often taken along. Sometimes a story is read. During the first months of school, the children followed with breathless interest the thrilling adventures of those who went to seek, "The Wonderful Wizard of Oz." This was supplemented with fairy tales or stories from "Stepping Stones to Literature," or with Eugene Field's poems, of which the children never tired.

On Saturday mornings the children write letters home or have music lessons, after which they play in the yard and also during the afternoon. On Sundays they have Sunday School for an hour, which is followed by church for some; others attend the afternoon service. In the evening, teachers and children assemble in the drawing-room to sing hymns.

THE DRIVING SET. During the week the Indian ponies take out many of the children for a delightful drive. Usually the first announcement after school is: "It's my drive to-day!"

As a rule six children take turns, driving for about three-quarters of an hour; sometimes two spend the entire afternoon out, but the pleasure is fairly divided among them and but one of twenty-five seems to prefer playing in the yard to driving. Her great delight is to wheel up and down the tall go-cart sent her. She needs nothing more to amuse her and is the picture of content, hurrying back and forth over the same tracks, neither annoying anyone, nor being annoyed. Yet she does not forget to mention the ponies in her letters, although she goes to drive so reluctantly.

"Dear, loving Mother," an epistle will read, "I went to ride with the ponies; when I got home I put my good foot out!" (She is partially paralyzed on her right side.)

To lose one's ice cream for dinner is sad indeed, but to lose one's drive is a bitter punishment at the Seguin School!

After supper, during the first few months of school, there was about three-quarters of an hour before bed time, when the children separated into different groups to play the games suitable for each. The older children played Lotto, Parchesi, Dominoes, Go-bang and various kinds of Authors. An art game proved successful. About forty pictures (Perry) were arranged with names and numbers written above and played like Authors. The children soon became familiar with the names of the pictures and learned to pronounce the artists' names exceedingly well. But four needed special help: two of these were children who formed sentences with great difficulty, always

requiring assistance.

Two evenings in the week the children gathered in the Gymnasium for music; on Saturday evenings, for the Magic Lantern pictures, which were very fine. There were little stories to be told about them and the names called out as they appeared. As one of the boys was fortunate enough to receive for Christmas a graphophone two evenings were given up to it instead of to the games. The children were always interested and quiet. That they might feel that they were taking part in the recital, the privilege of choosing a selection was accorded them. In most cases the choice was made promptly, varying usually on the different evenings, although each had a selection which was a particular favorite; perhaps, "The Stars and Stripes Forever," the "Soldier's Chorus" from Faust, or "Good-by, Dolly Gray!"

The musical evenings were thoroughly enjoyed. The time was divided equally between vocal and instrumental music; compositions relating to the story work were sometimes played. At a special Mendelssohn recital the "March of the War Priests" was very popular. Songs from the Eugene Field Book,—*"The Rock-a-by Lady from Hush-a-by Street,"* and *"Wynken, Blynken and Nod,"* were learned: many of the other songs were sung to the children. College songs, songs from the St. Nicholas Book and Neidlinger songs for the younger children, were sung well, although the few harsh voices detracted from the sweetness which the singing had, without them. One of the hardest requests to make, is that of asking a child not to sing, such a pleasure is it to them.

The older children are familiar with the names and portraits of the great composers; know many of their compositions by name, and recognize them when they are played. The nationality of the composer was emphasized rather than any dates. Wagner, whose music is so dramatic that children may be introduced to it at an early age, appealed to them strongly. The "Bridal Chorus," "March from Tannhäuser," and the "Evening Star Song," were listened to attentively; as, were also, the several movements of Beethoven's Funeral March Sonata, which were played on different evenings. Schubert's "Serenade," and the "Träumerei" were often asked for. In May, after the Circle had been pasted on the calendar, during the Morning Games to indicate the day, the children sang Pippa's little song of Spring. At first it was recited, as the many musical settings were tried and found too high, but the inspiration of the teacher in charge of the music answered most perfectly the need. Thus Rubenstein's "Melody in F" came to be associated with Browning's words, and the children sang out joyfully:

God's in His heaven—

All's right with the world!"

Late in October, when the days grew colder, the children came in from their walk about five o'clock. Twelve of them gathered in the Gymnasium for a story which was read or told and for the making of scrap-books which became an important feature in the week. In February, when they could stay out longer, again, the "Scrap-book Class" met on Tuesday evenings after supper when the table arranged in the form of a square with the books spread out on them had an interesting look. A new story with pictures to illustrate it was told each week. A few minutes before half-past seven books

were put away and the evening hymn which the children love so dearly was sung. "Now the Day is Over," sung to the Barnby music, is perhaps the loveliest little Prayer-Hymn in the world. Then filing out, one by one, each child dropped a charming courtesy, all going happily to their rest to awaken as so many of us aspire to do:

"Pure and fresh and sinless,
In Thy holy eyes."

The first thoughts expressed in the scrap-books were in the minor key, for the death of Mr. McKinley caused genuine sorrow among the children. They asked to commence the books with his picture; around it were pasted autumn leaves, because as they expressed it, "He died beautifully, like the leaves and flowers." On the opposite page the National Hymn was placed with a Shakespearean quotation,

"His life was gentle, and the elements
So mix'd in him, that Nature might stand up
And say to all the world, 'This was a man!'"

The subject of death, thus brought up was not avoided, rather, it seemed an opportune time to discuss it, as so soon the children would be brought face to face with it in Nature.

Long walks were taken in the late autumn days; often the children went on chestnutting expeditions, and, though not allowed to eat nuts of any kind, took much pleasure in gathering them for the teacher. In the scrap-books were pasted Landseer's "Piper and Nutcracker," with the words of the squirrel Song copied from the Gaynor book. The first verse of Bryant's "Death of the Flowers" was memorized and another Shakespearean quotation,

"All that lives must die,
Passing through Nature to eternity."

At this time each child wrote or dictated an autumn story. The stories were first written alone, then correction in spelling and construction made before copying. Those who were unable to copy sufficiently well were given typewritten poems and stories, that the association of art and literature in the books might be complete. When finished, each book represented the child's originality and stage of development. Undoubtedly, of the twelve children there were some who did not grasp the ideas expressed in the poems and stories in their entirety, but all did get a general impression which was lasting and definite.

One of the best autumn stories was written by a boy who loves trees, better perhaps than anything else in the world. It was named from one of the songs the children sing.

ALL THINGS BRIGHT AND BEAUTIFUL

The autumn leaves are falling, the trees are dressed in golden dresses, in red, yellow and brown. The oaks bowed to me in the brisk northwest wind, and I said, "Thank you, Oak Tree, for the acorns you sent down as I went under your branches this afternoon, when the winds blew briskly."

The chestnuts also bowed to me, and I said, "Thank you, good Chestnut Tree, for the nuts you sent me. I have planted them in the ground and I hope that they will grow soon into young trees." The boys built bonfires in the woods this afternoon. I saw the two evening stars and the silver moon and the beautiful sunset this afternoon, and the blue and white clouds sailing in the sky. It was a pretty sight to see the picture of the sky in the lake. It pleased me. I am reading about Pandora.

For the in-door reading, copies of Hawthorne's "Wonder Book" were obtained for the children and even those who read poorly were given a turn, the others listening patiently and following in their books. Each day the children were asked to tell what they had been reading about. When the story was finished it was told as a whole. The results were satisfactory, for all the children were able to tell something, even if hesitatingly and needing help, while four gave quite easily a connected narrative. Some of the stories, written from what the children remembered, were very good. One of the older girls who can do very little by herself, though she copies very well, dictated her story of "Pandora" without hesitation or help.

Pandora was a very curious little girl. She opened a box which Quicksilver had told her she must not open. Pandora wondered what was in the box, and at first she tried the string, then undid it and opened the box. She heard a buzzing noise like bees make as she opened it and out flew tiny insects which were Troubles and Diseases and they went into the world to make people miserable.

Pandora did not like it when she found out what was in the box and she slapped down the lid quickly.

Then she heard a noise again; it was a fairy in the box and she said, "Open the box, Pandora, and let me out."

"Oh, no!" Pandora said, "I want no more trouble."

But at last she opened the box and a fairy came out with rainbow wings and she flew after the Troubles to take them away.

"I will be with you always, Pandora," said little Hope, for that was the fairy's name. And Hope was always with her in her trouble to comfort her.

"Hope spiritualizes the earth."

The children had some very enjoyable times dramatizing the Wonder Book stories. They entered into it enthusiastically, and understood better what they had been reading by enacting it. In dramatizing "The Paradise of Children," the story was read by one of the older girls, the others following in their books, with Epimetheus and Pandora reading their parts at the right time. Everything went nicely and Epimetheus' "Oh, I am stung! I am stung! Naughty Pandora! Why have you opened the wicked box?" was splendidly given. The other stories were enacted in similar ways.

The story of Pandora with its "imitations of immortality" connected well with the autumn thoughts. Pictures of Hawthorne and his home, Pandora, Hope and Perseus, were pasted in the scrap-books. Burne-Jones' "Hope" was thought very beautiful. Underneath was written the quotation used in the story of Pandora, the long words of which the children struggled to pronounce, but understood its meaning.

Many of the children asked for copies of the "Wonder Book" for Christmas, and although no one was fortunate enough to receive the edition illustrated in colors by Walter Crane, the copies illustrated by Church were very welcome.

On Christmas morning the children assembled in the largest school-room

to open their boxes: needless to say it was a very happy time for them and the study in individual expression was very interesting. The precious baby who found a chair and commenced to rock her doll baby to sleep, singing in a sweet bewitching fashion of her own, a lullaby by Neidlinger; the excited boys trying to make everyone get out of the way so their fire engines might have a clear road; and the older girls delighted with their books or numberless pretty gifts—all were as joyous as children can be. In the evening, all assembled in the Music room to sing Christmas Hymns.

The Christmas work in the scrap-book, consisted in pasting Lerolle's "Arrival of the Shepherds," with the hymn, "O Little Town of Bethlehem," which the children learned to sing. The music used for this hymn and "Shout the Glad Tidings," was the beautiful setting made by William S. Chester, late organist and choir master of St. George's Church, New York City.*

Many other hymns were sung and the Christmas story told and read from the New Testament.

On New Year's Day, the picture, "Christmas Chimes," was pasted in the scrap-books with Tennyson's poem, "Ring Out Wild Bells," some verses of which were memorized. Later, the first scrap-book was completed with pictures of Eugene Field and his home. Copies of "The Duel," "The Rock-a-by-Lady," "Little Boy Blue," and "Krinken," were placed opposite.

During December and January, "Alice in Wonderland," and "Through the Looking Glass," were very much in favor; the interest was heightened at Christmas time when one of the boys received the delightful Peter Newell "Alice."

From March until May, the subject for the story work, varied with supplementary stories and plays, was "King Arthur and his Knights of the Round Table." The Gymnasium underwent a transformation and became the Hall of Camelot; the children received the Knights and Ladies of the Court and delighted in calling each other by their play names. They possessed certain characteristics which made the fitting of the names an easy matter. The Queen, tall, fair and very pretty, carried herself with great dignity; Elaine, if younger, was certainly not less fair than the "lily maid of Astolat." Galahad was quite ideal in his red robe. The children for the most part made their own costumes, the ladies sewing for the Knights; and at the play which was an outcome of the story they all looked charming and conducted themselves in a way altogether satisfactory; although they were perhaps too solemn and subdued, which made the play lack the spontaneity which had marked all the rehearsals.

The story was rewritten and simplified from Malory's *Morte D'Arthur*; selections from Tennyson were used. The whole story the children heard at least three times, certain incidents, oftener. The play, besides the costumes and a few parts which could be simply enacted, consisting in the retelling of the story and the asking of questions. No parts were learned, neither were set questions asked; what the children remembered they told as well as they could. This story they loved and comprehended, if not intellectually, spiritually. In giving them this world classic, a great step was taken, for it

*Publication of G. Schirmer, N. Y.

will be for them a definite link to connect them with the outside world of books and people from which they are separated, by reason of their retarded development.

The new scrap-books were made of gray charcoal paper. The first pictures pasted in were those of King Arthur and Galahad, with selections from the "Idylls of the King." Below the beautiful Watts' Galahad, two quotations were written.

"Blessed are the pure in heart, for they shall see God," and two lines from the poem, "Galahad."

"My strength is as the strength of ten,
Because my heart is pure."

The work in literature, carried on out of school hours, from April until June, was,—the Story of "Pippa Passes," simplified from Browning, illustrated with "The Song of the Lark," by Breton; Corot's "Spring," illustrated with music by Grieg and the verse from Solomon's Song, II, 11, 12.

Pictures of Mendelssohn, Beethoven and Schumann were pasted in the scrap-book, also the story of Orpheus and Eurydice and other selections from Tennyson with portrait; "Hark, Hark, the Lark," from Cymbeline, illustrated with Cuido Reni's "Aurora;" myths of Apollo, myths of the Rainbow and Flower myths. The last page of the scrap-books was illustrated with portrait of Stevenson, with selections from his poems.

The personal work expended by the children on the scrap-books made them valuable as an expression of individuality and development. From time to time, as they advance, the stories can be remodeled, poems recopied and additions made, so that instead of being placed carefully in a drawer when they are finished, the books will be a constant source of entertainment to them, the beginning, perhaps of a little library. Also they may serve as a guide and inspiration to those under whose care the children come, as an incentive to carry on further work of this kind with them. It is possible that the children will be able to instruct their elders, as doubtless they will find many who are not so well informed as they are about the contents of their books.

Whenever it is possible, the musical illustrations should accompany the poems and pictures; and through this threefold association of literature, art and music, the children will gain much, intellectually and spiritually. They can appreciate and understand "the world beautiful," and should be brought constantly in touch with it in as many ways as possible.

One gets very near to them in their play hours; their self-expressions are exceedingly interesting. They enter into the spirit of the heroic and the mystical with an understanding which is surprising; their responsiveness and enthusiasm are very gratifying. Indeed, they seem, with their perfect simplicity, divine innocence and unchanging trust in those about them, to be—*the pure in heart who shall see God!*

Undoubtedly, this article refers to work which may be carried on successfully with the "fortunate," defective child—one who has all the advantages which money can procure; one whose bodily comfort being assured will always be happy, not knowing what he has missed. Yet, this is work which is especially needed among the defective children of the poor, who seem to

have nothing except the gift (?) of life; who lack health, proper care, education and often love! Of necessity, they have been neglected in the schools or crowded out of them, but a brighter future surely awaits them, since in a number of cities, classes are being organized to educate them specially. It is to be hoped that the crippled children, who have been so woefully neglected, will be included also.

There is not, I think, a more helpful thought for all workers among backward children, than the gospel of Heinrich the Bell Founder, which comes with its inspiring message and appeal—OPEN THE WINDOWS—*Alas! their windows are so tightly, so pitifully shut.*) LIGHT AND GOD STREAM IN!*

*The Sunken Bell, by Gerhardt Hauptmann. Act III.

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EDITORIAL.

The paper on "Discipline" read at the last meeting of the Association and the subsequent discussion, which will be found in this number, give the present status of opinion on this subject among the profession in America.

While corporal punishment is not favored, yet it is held to be permissible and necessary in some cases as a last resort. The present state of opinion in general on this subject is, no doubt, a reaction from the excessive practices of our fore-fathers. And, perhaps, in our reaction we have gone too far, and the proper position is a more median one. It is by no means certain that the infliction of a certain amount of physical pain is harmful. No doubt, physical pain has been the greatest educational force in the development of the race, and its entire elimination now may be detrimental to the best health and vigor of the growing generation. More certainly, if the child recapitu-

lates the history of the race.

While this probably is true in general terms, yet, when applied to the training of the psycho-asthenic many restrictions must, from the nature of the case, arise.

The theory of punishment, as applied to the psycho-asthenic, is educative as distinguished from the preventive or deterrent and the retributive. Certain habits and lines of action must be eliminated and certain modes of behavior taught. He must learn that some actions earn disagreeable consequences and others agreeable consequences. In other words, he must be supplied with motives for the proper behavior. Just what will be regarded as disagreeable consequences depends on the child and can only be discovered by study of the individual child. The great differences of mental capacity produce great variety here. What will be successful with one child will very often be of no value with another. The business of the disciplinarian is to search for these means of mental restraint and success here lies chiefly in his ingenuity. And what appear to us as silly and indifferent actions are often of the most value for they restrain the child and the end is gained.

But where ordinary means fail and corporal punishment is suggested, the first thing to be considered is, will it restrain. Very frequently, it will not. But where the means already indicated fail, and it is shown that corporal punishment will restrain, there may be not only a place for it but full duty will not be done to the child or his mates if it is omitted.

In all discussions on discipline, corporal punishment receives more attention than it deserves because of its rarity. The mere statement that corporal punishment is permissible, often carries the impression that it is a common and ordinary mode of discipline; whereas the very reverse is true in all well regulated institutions for feeble-minded. In a population of one thousand it will not occur, on an average, more often than once or twice in three years, and then only among those who approach more nearly the criminal type than the psycho-asthenic,—the moral imbeciles. And it is the lack of knowledge of this type, as well as the lack of appreciation of the great variation in mental ability of the feeble-minded, which lays open to criticism, on the part of the general public, all discussion of this subject.

A Visit to the School for Defectives at Rome, Italy.—The first school at Rome for the education of imbecile children was founded on the Janiculum in 1884 by the Senator Tommasini, Nincenzo. In 1897 Professor Bonfigli called the attention of the Chamber of Deputies to the necessity of taking steps to get rid of the inferior position of Italy compared with other civilized nations in the care of the feeble-minded; but, in a country so heavily burdened as Italy, it is scarcely to be wondered that the Chamber was not ready to make this a permanent charge upon the public treasury, seeing that it has not yet become so in Great Britain. Next year Professor Bonfigli founded the League for the Protection of Deficient Children and the cause found an eloquent advocate in Doctress Montessori, who went through the principal towns of Italy, kindling enthusiasm everywhere and starting local committees. In

1901 a training school for imbeciles was commenced within the buildings of an old convent in the Via Pietro Cossa under the able charge of Dr. Montesano. I had the pleasure of visiting it when in Rome towards the end of last March. There were fifty boys in the school most of whom seemed educable. They all seemed in good health and were well cared for. The staff of teachers is liberal,—there are a matron and five governesses with male teachers of music, gymnastics and language. They have also the services of eminent medical men in special diseases. The school material was ample and varied. There were some appliances of Italian device for testing sight and touch which I had never seen before. Evidently every means are used to awaken a dull apprehension and hold the attention of the pupil. Here I had the pleasure of meeting with the illustrious professor, Dr. Augusto Tamburini, of Modena, who was at that time in Rome for a few days to prepare for the Government a report upon the asylums of Italy. A chamber had been set apart for scenic exhibition which was darkened and on the little stage three of the pupils played a pantomime while one of the governesses explained the meaning of it to the rest as it went on. Most of the boarders were sent from the great asylum of Rome by Professor Bonfigli and there are also a few private boarders. Payment is made by the several communes and a subsidy of 1,000 lira is accorded by the Minister of Public Instruction.

In the *Rassegna Internazionale*, 1 Marzo, 1902, there is an able paper upon the education of deficient children by Professor A. Gianelli, which enters more fully into the whole subject.—WILLIAM W. IRELAND, 5-31-1902.

Epilepsy.—It is very encouraging to note the wide interest in this subject which the number of papers and their quality demonstrate. There have been two marked advances in our knowledge of epilepsy during the year. One in respect to its dietetic treatment and the other in the study of the blood. By far the most significant paper which has appeared is that of Ceni.* The object of this paper is to study the pathogenesis of epilepsy for the purpose of adding to the proof of the autotoxic theory of the disease. Small doses of blood serum of epileptics were injected into other epileptics for the purpose of ascertaining if the specific poison would introduce into the organism any property that might be of therapeutic value to other less severe and earlier cases. Following this was an attempt to render a patient immune against the toxic substance found in his own organism by giving doses of the same serum. The therapeutic results are divided into two groups: eight cases with positive and two with negative results. It may be said that even if the benefits obtained, as regards the general condition and the more or less remarkable diminution of all epileptic manifestations, are only transitory, they are none the less of sufficient duration to commend the treatment to further trial. A number of papers have appeared which deal with dietetic treatment of epilepsy, as first advocated by Toulouse and Richet. This treatment, in brief, consists in the withdrawal of all chlorine compounds from the food, especially the NaCl, and supplying in their places the bromide salts. In this way very large doses of the bromides are well borne. Schäfer† tried this

method on some old epileptics for a period of two weeks, and found very definite improvement in both the attacks themselves and in the general psychical condition of the patients. Schnitzer† reports his experience in sixteen cases. The diet was as follows: per day, one and one-half litre milk, fifty gr. butter, three eggs unsalted, four hundred gr. bread and some fruit. The bread was baked with NaBr instead of NaCl, and each four hundred gr. of bread contained three gr. of bromide. His results are in two cases disappearance of all symptoms, in ten cases great improvement, in two slight improvement and in two no result at all. The experiment lasted forty-two days. Whatever else can be said of this procedure, it can safely be admitted that it represents the greatest advance in the dietetics of epileptics that has yet appeared, and if it is combined with the methods used in the colony treatment of epileptics, good results are sure to follow. M. Braß describes an organism which is found in the blood of epileptics, and which he thinks is the probable cause of the symptom. To this he has given the name "neurococcus." Further investigation will be necessary before this theory can be accepted. Feinberg‡ treats of luetic epilepsy in a very interesting paper. He differentiates two types: first, an epilepsy without any cerebral disturbances; and second, epilepsy with cerebral phenomena which immediately precede or follow it. This paper is of great interest, as it throws light upon the subject, which has always been one of great obscurity.—*Interstate Medical Journal*.

Dr. Strasser finds that diminution in the number and intensity of the attacks in epilepsy can be obtained by cold applications on the cranium and spine. On the other hand, it is curious to note that the wet pack, of which the calming action is so manifest in cases of exaggerated reflexes, offers no advantage in epilepsy. Sitz baths of 26-30° C. exercise a much more marked sedative action in this affection.

In fact, hydrotherapy properly maintained enables one to combat the cutaneous and gastro-intestinal manifestations of bromism. And by its use one can diminish the quantity of bromides administered without lessening the therapeutic effect. *It is undeniable that hydrotherapy favors the rapid elimination of the bromides.*

Mechanotherapy does not give very marked results and electrotherapy in any form gives results either negative or hurtful.—*Bl. f. Klin. Hydrotherapie* June, 1902.

Dr. Cautley presented a girl fifteen months old to the Society for the

*Sero-Therapy in Epilepsy, Med. News, No. 10-11, 1902.

†Neurolog. Centralblatt, No. 1, 1902.

‡Neurolog. Centralblatt, No. 17, 1902.

§Rev. Neurologique, May 30, 1902.

||Neurolog. Centralblatt, No. 17, 1902.

Study of Diseases of Children, of London, at its meeting on October 17th, 1902, which had been under his care for hydrocephalus since the age of eight months, which had been arrested by repeated lumbar puncture. The hydrocephalus was secondary to basal meningitis. In all, thirty-five ounces of cerebro-spinal fluid were drawn off by repeated tapplings, each being followed by a gain in weight and marked improvement in general health. Although the hydrocephalus had been arrested the child was blind and lacking in intelligence.—*Archives of Pediatrics*.

According to Bourneville traumatic epilepsy only is amenable to surgical treatment. The intervention should be early and many years should not have elapsed since the first attacks.—*Report of Cong. of Neurologists and Alienists of French Speaking Countries. 1902.*

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ORIGINAL ARTICLES.

PRESIDENT'S ADDRESS

DELIVERED AT THE TWENTY-SEVENTH SESSION OF THE ASSOCIATION OF

MEDICAL OFFICERS OF AMERICAN INSTITUTIONS FOR

IDIOTIC AND FEEBLE-MINDED PERSONS

HELD IN WASHINGTON, D. C., MAY 15TH AND 16TH, 1903,

BY

J. M. MURDOCH, M. D., PRESIDENT OF THE ASSOCIATION.

FOR the twenty-seventh time this Association convenes in annual session. These sessions are held that we who are engaged in the care of the feeble-minded may gather together, become acquainted with each other and compare notes, so that the experience of each member may benefit and become the property of all. Fortunate are we who gather together to-day in finding so much accomplished by those strong and zealous men, those pioneers in the work, who founded the Association.

Twenty-seven years ago, at the time of the organization of the Association, there were but a few more than two hundred feeble-minded persons receiving institution care in Pennsylvania. At present this number has increased almost ten fold, and this is but an example of the progress made in the states which then possessed institutions for the feeble-minded. Many states, which at that time made no provision for the care of this class of their defectives, are now provided with admirable institutions caring for large numbers of the feeble-minded; and other states are now seriously contemplating the construction of similar institutions. At present eighteen states are caring for over twelve thousand feeble-minded persons in special institutions, either

owned by the state or receiving state aid, while about three hundred feeble-minded persons are being cared for in private institutions.

With the increase of general knowledge, and particularly with increasing interest in sociology by the intelligent people of the country, our work is being better understood and appreciated. We trust and believe that the time is not far distant when public sentiment will demand that the state segregate all the feeble-minded whose presence in the home and community is a constant source of danger. It will take time and money to accomplish this; however, we must not let the public interest decrease, but must continue as missionaries in the field, and whenever and wherever the opportunity presents be the educators of the people, particularly our legislators, in matters pertaining to the feeble-minded and the importance of their segregation and control under state supervision.

It is not sufficient that accommodations be provided for the great army of feeble-minded, it is our duty to point out the necessity of laws governing their control by the state. The question of who should be sent to our institutions should be decided by those most competent to judge; and, when placed within an institution, removal should not depend upon the mere whim or misguided judgment of parents or friends totally incompetent to judge of the possible consequence of their removal. Too often a feeble-minded child, after spending a year or two in an institution and learning the rudiments of some occupation or trade, and to be a useful, happy and contented member of the institution community, is removed by relatives who, visiting the institution, see the child clean, tidy, cheerful, happy and industrious and thinking if so in the institution he will be the same at home, remove him. Thus the training received instead of proving an aid, proves to be a detriment, aiding as it does in obtaining a liberty which the child can only use to his own degradation and the degradation of society; miserable himself, possibly becoming the parent of children as defective as himself and probably ultimately to be restrained of his liberty in the almshouse, or possibly the jail or penitentiary. If allowed to remain in the institution, instead of shame, crime and pauperism, the feeble one might have spent a useful, harmless life, filled with honest labor and the pleasure of congenial companionship.

We cannot be too emphatic in pointing out the importance of placing in proper hands the legal control of the admission into and removal from institutions for the feeble-minded.

We hear much of the danger to the nation by pollution from without through the immigration of those unfit for citizenship, far more than of the danger by pollution within through the propagation of children who will never be fit for citizenship. As a foe within is more to be feared than one from without, so should we guard more zealously against the development of ills within than against the entrance of those from without. We must keep constantly before the people the importance of making at least as strenuous efforts to protect the coming race of American citizens, by preventing the propagation of unfit children within our own land, as are made by the Bureau of Immigration to protect it by preventing the entrance of the unfit from foreign lands.

In regard to this matter let me say a few words about special classes for

feeble-minded children in connection with the public schools. Such classes are springing up rapidly in the large cities throughout the United States. We grant that existing conditions seem to make them a necessity in order that the development of normal children may not be hampered by the presence, in the class room, of the defective ones; but is it not possible that these special classes are preventing the sending of feeble-minded children to institutions at the time when they should come under institution training? If the child will ultimately be unfit for citizenship and must eventually be deprived of his liberty is it not evident that it is best, both for the child, his family and society at large, that he be sent to a suitable institution as early as possible after reaching the age when he should attend school, before undesirable habits are formed; before he becomes accustomed to street life, if a child of the poor, or habituated to habits of idleness if a child of the rich? Do we not find that those children who enter the institution early in life are more happy and contented and can be trained to be more useful than those who come to the institution later in life?

In this connection the report of Mrs. Ellen Pinsent, Chairman of the after-care committee of the Birmingham, England, School Board, is of the greatest interest. The committee of which Mrs. Pinsent is chairman, she states, was first organized to find situations for those children who left the special classes capable of working, and also to see if there was anything that could be done for the hopeless cases where the children were found to be incapable of work. While this was the immediate object of this committee it was by no means the most important. The most important work was the investigation of the worth of the education given in special classes for the defectives. It was hoped, that if for some years after they had left school the careers of the children who had passed through this course of training were closely watched and accurately reported, the committee would have some definite facts to place before the school board which would enable them to judge how far the special classes really met the requirements of mentally deficient children.

To show how many of those who left the special classes and ultimately became self-supporting, or even partially so, Mrs. Pinsent states that as yet the committee has not been in existence a sufficient length of time to give extensive statistics; however, she gives the following facts:

"We had forty-eight children on our list to begin with, and of these we found it impossible to trace thirteen. This, I hope, is a larger percentage than will ever occur again. Many of these children had left school for some years before we began work. Now that each class is taken up at once and constantly watched we shall have a better chance of tracing them, though I am afraid we shall always lose a certain number. The parents are perpetually flitting, and as there are so few after-care committees when a child goes to another town we have no organization to whom we can hand him or her over. Before passing on I should like to point out that children who are perpetually wandering are almost always the offspring of low and degraded parents; and, probably if they were found, would swell the numbers of the incapable and hopeless. This should not be forgotten when conclusions are drawn from our statistics. It also points to the advisability of such chil-

dren being placed in a boarding school where they could be kept under permanent control, and not left to the chance of their parents remaining in the neighborhood of a special class or of an after-care committee. There can be no doubt that many parents of feeble-minded children, belonging as they so often do to the street-hawker and irregularly employed class, are even more migratory than the rest of town populations. This is one of our most disheartening difficulties; for, unless the after-care association can establish permanent custodial homes it must always lose a large percentage of cases, and every lost case may mean, and generally does mean, a future generation of feeble-minded children.

"Of the thirty-five remaining persons, sixteen are at work. The average age of these sixteen persons is seventeen years, and the average weekly wage which they can earn is 5s 9d (about \$1.43); one boy earns 10s (about \$2.50) a week. We have not at present been established long enough to know how often these persons change their situations, or the amount of time wasted during such changes, which if considerable, would, of course, lower their weekly wage. But, speaking generally, I believe that our investigation will show that they are perpetually changing their situations. Certainly of the four cases which have come under my own eye only one is satisfactory; one person is too bad to work at all; one never keeps his situation more than a few weeks, and the other never more than a few months. Neither of the latter will ever be capable of self-support after their near relations die, and I think it probable that both will find their way into goal. Here they will cost at least as much as in an industrial colony where I feel sure that working under supervision both could have contributed largely to their own support. These cases I believe to be typical of most of the sixteen. A small percentage will get along passably, but by far the greater number will eventually be found in the prison, the penitentiary or the workhouse. The next seven children on our list, although capable of work, are out of work. This you will notice is nearly one-third of the total number of cases in which the subjects are capable of work. Our after-care committee will probably get them work of some kind, but by that time others will have lost their situations and I fancy our books will show that this is about the usual proportion. Our utmost efforts will probably prove inadequate, there will always remain a third doing nothing. If those who fail to keep their situations were placed in industrial colonies they would work continuously with greater profit both to themselves and to society at large.

"I have now accounted for twenty-three out of our thirty-five children. Of the remaining twelve, one has died, five are so bad that they should be placed at once in some asylum or home, and six are being looked after fairly well at home, but are incapable of work and will have to be provided for on the death of the mother. I have said fairly well looked after, and by this I mean that they are fed, clothed, and kept passably clean; but I do not for a minute believe that they are protected from all chance of moral harm. Some of them are girls who should never be allowed out of the house by themselves, instead of which I know that they are prone to wander alone for hours in the streets. A poor mother with other children cannot give her whole time and strength to the weak-minded member of the family. The child must take

her chance during the busy hours of the day. These girls are often of a clinging and affectionate disposition and will follow any man who chooses to speak kindly to them. We who pay the rates and the taxes will have to support these girls in the end. Would it not be wiser to do so at once, instead of waiting until they have produced others for us and our children to support?

Once more it is for permanent industrial and custodial homes which we must work, and the chief duty of an after-care committee, is to collect the evidence which will demonstrate their necessity. No after-care committee, however vigilant its members, can watch over the feeble-minded at all hours of the day and keep them from harm; but what an after-care committee can do is to show the public the result of its investigations and go on publishing facts until rate-payers, poor-law guardians, and city councillors are convinced."

It is earnestly to be hoped that after-care committees will be established, if indeed they do not already exist, in connection with the training classes for defective children in America. If so, may we not expect them to furnish evidence to support the view that, with few exceptions, the children sent to the special schools should have been sent to institutions where they would be under constant supervision and trained for a life of usefulness with congenial companionship within the institution colony.

From a practical point of view, considering the conditions as they exist, the lack of sufficient accommodations in our institutions and the difficulty of obtaining the consent of parents to consign their children to a permanent residence in an institution, the special schools are no doubt a necessity and do a good work. Is it not true, however, that where it is evident that a child is feeble-minded the interest of the family and posterity are best conserved, not by temporizing, but by facing the condition in his early years and placing him in an institution, where these feeble ones may associate with each other, working and playing all their lives, children to the end—but happy, harmless children instead of dangerous and degraded ones?

There are, no doubt, many children not feeble-minded who, through prolonged illness or lack of opportunity, are far behind children of their own age in the public school curriculum. There are other children who, through lack in the faculty of merely memorizing, appear to disadvantage among their fellow pupils, but who are by no means feeble-minded.

If, as pointed out by Dr. Wilmarth, the special schools were so conducted as to constitute clearing houses to separate the inherently feeble-minded from those whose mental growth is retarded by circumstances temporary in character, they would serve a useful purpose; but if they are attempting the impossible, the education of the inherently feeble-minded to equip them to battle single-handed in the struggle for existence and thus prevent their entrance into institutions during their early years, they are harmful. It is our duty to point out the limitation of usefulness for such schools.

TUBERCULOSIS AMONG FEEBLE-MINDED CHILDREN:—On looking over the reports of institutions we are struck with the frequency with which tuberculosis appears in the mortuary tables. Tuberculosis, "The White Plague," which to-day is receiving so much attention throughout the world is nowhere more prevalent than among the feeble-minded. It no doubt plays a larger part in the etiology of feeble-mindedness than has heretofore been ascribed to

it. In the gradation of our children within the institution are we doing all we can to separate the tubercular from the non-tubercular? Certainly it is of greater importance to do so than to separate the epileptic from the non-epileptic.

Those of us who spend our lives among the feeble-minded become familiar with and accustomed to their peculiarities. The filthy habits of the low grade child, or the perverseness of the morally deficient, no longer affect us as when we first took up our abode in their midst. The epileptic seizure no longer disturbs our sensibilities as when we first beheld the muscular contortions, the heavy breathing, the frothing mouth and cyanotic countenance of the unfortunate victim of this awful malady. The deformity of head and body and limb, the strangely formed features which so often accompany the feeble mind, no longer give us horrors or make us see things at night. To all these things we have become more or less inured. It is well that it is so, but let us not become hardened or indifferent.

Do not let us neglect the opportunity for research into the mysteries of psychiatry and pathology which the vast amount of material within our grasp makes possible, but do not let the scientific aspect of our work make us less thoughtful or attentive to the comfort, well-being and happiness of the helpless ones under our charge. Let us see that our experience and added knowledge do not make us indifferent or careless; but rather more kind, more sympathetic, more filled with love for the unfortunate for whom it has been put in our power to do so much.

Remember the words of the Man of Nazareth, "Inasmuch as ye have done it unto the least of one of these, my brethren, ye have done it unto me."

Remember that the best institution on this earth is the home, and that the nearer we approach home life in the institution the nearer we approach perfection. Let us do our utmost to gain the confidence of the children under our charge, sympathize with them in their troubles, let them see we are pleased when they are joyful. Remember the value of a kind word and let us not be unmindful of the heartaches caused many a sensitive nature by a harsh rebuke. Remember the value of employment in dispelling the gloom from a discontented and unhappy child.

But do not impose, or let others impose, upon the willing ones; but rather, see how the work may be divided that all may lend a helping hand. Let us make our institutions homes where kindness is the ruling spirit and hardships unknown.

Then will we have the love of the children, the gratitude of their friends, the confidence of the people, and above all will we have that peace of mind which passeth understanding.



DISCUSSION

Dr. Barr: I wish we could get our children taken care of for life. When they go out from our schools they are in more danger than ever, but I can-

not convince parents of this. Last week I had the most notorious moral imbecile taken out of my school to be a page in a club in Philadelphia noted for card playing and drinking, but I could not convince the mother of the danger.

Dr. Wilmarth: I think the task of convincing parents is hopeless, but there is no more urgent question before us than to convince legislatures of the necessity of taking children from the community who are going to be a burden to it and who are going to increase the criminals of the land. Our work in the future must be in that line.

Dr. Smith: This is a subject of the most vital importance. I meet it every day. I apprehend that this Association would hardly go on record as saying, "Once in an institution always in an institution," but I would like to hear an expression of opinion which will place those of us engaged in private work and who have not the support of the state and cannot be as independent as men in state institutions,—an opinion which will give us something absolutely definite to work upon, some statement which will enable us to say positively that the feeble-minded should have permanent care. Eastern people seem to be more educated as to possibilities and probabilities in this direction. Dr. Barr in one of his reports refers to the perpetual care of the feeble-minded, and it has staggered everyone to whose notice I have brought it.

Dr. Carson: I think most of the superintendents are in favor of some stringent law which would give us the power to hold cases permanently in institutions. I myself think it would be unwise to have such laws enacted. There would be, perhaps, no objection to a law which gives superintendents discretionary power. The parents are naturally interested in their children, and I do not believe it is possible to pass a law in any state which will take away parental rights. It is, however, important to hold certain cases in institutions. I have never had much difficulty in holding such cases. I have several cases where the parents have tried to get them for years, but without legal process I have retained them. If an attempt were made to bring about a law to permanently restrain and control all feeble-minded persons in institutions there would be a re-action. It is a rule that works both ways. A few years ago a member of the State Board of Charities said he thought there ought to be power to restrain all such persons. I took issue with him and said: "Supposing you had a feeble-minded child, would you be willing to place that child in an institution if you felt that you could never take him away?" He thought a moment and said, "No, I wouldn't do it." That is what would follow. A great many children that ought to be in institutions would be kept away for fear they would be retained permanently. I have always felt it was best to have the law such that it is easy to place them in the institution and easy to take them out, where they have suitable homes, and there are many cases where there is not the slightest objection to their going.

Dr. Wilmarth: I do not think there should be any difficulty in enacting a law that should place such children in the control of an institution, for incorrigible children are placed in reform schools until twenty-one when parental control ceases.

Dr. Lincoln was asked to say a word.

Dr. Lincoln: I agree entirely that it is very desirable that this particular class of children should be under the permanent care of somebody who is responsible for them, if their parents cannot be.



FARM COLONY IN MASSACHUSETTS

W. E. FERNALD, M. D., WAVERLEY, MASS.

AT the time of our meeting in New York we had just bought land for our farm colony,—about two thousand acres of wild land in western Massachusetts, partly hilly, partly valleys. The best and most fertile farms in that part of Massachusetts are on the hill-tops. The valleys are corroded by the glaciers and stripped of the soil, which is covered with gravel and drift, but the hill-tops are covered with strong, fertile soil. So we included three or four hills in our purchase. We were compelled to go a long distance—sixty-one miles—from our home institution because we could not buy cheap land, which was also good land, nearer. That seemed like an objection at first, but we felt the essential thing was to get fertile land and enough of it, along with wood and water. We found all we needed, water, wood, clay for bricks, gravel and sand, and stone in addition to the fertile land.

Two years ago at about this time we began our work by sending to the farm the first group of fifty boys. They were sent up in charge of people employed at the school. We fitted up some rough sheds in the rear of one of the old farm houses and covered them with tarred paper. We made quite extensive temporary provision for the colony. One building was for a dining room, one for a clothing room, and in addition we had a sitting room, and the boys lived in the camp until the first of January, before we had our first permanent group of dormitories built. Our first work was the water supply. We discarded the old wells and dug new ones. We tore down the old sheds and excavated basements and built in the rear of the old New England farm house a building for sleeping rooms. Each of the two sleeping rooms accommodates twenty-five boys. They are connected by a corridor with a building containing the water closets and the toilet arrangements. This building is one hundred and fifty feet from the frame house and is occupied only as sleeping rooms. In the day time the sleeping rooms are not occupied. The sitting room has a huge fire-place. The room is decorated with pictures and they have their games there. To my mind it is the most attractive room in our institution. The original farm house is used for living rooms for the matron and farmer, and the people who take care of these boys. This constitutes a group. In the rear we built a first-class new kitchen detached from the house with every convenience, pantries, store-rooms, etc. The other buildings which we are about to open are similar. We have some 25,000 acres in wood. It grows rapidly and we burn it in place of coal; we use no coal on



FARM HOUSE, KITCHEN AND DINING ROOM ANNEX
(Farm House Group, Templeton Colony)



COW BARN AND SILO

(Farm House Group, Templeton Colony)



DORMITORY COTTAGES
(Farm House Group, Templeton Colony)

the place. The dormitories, which are rectangular, 20x50 feet, have large fire-places in the centre and we use the fire-places for heating and ventilating in the fall and spring. In the winter we put in a huge heater in the fire-place, a cylindrical wood stove that stands four feet high and is two and a half in diameter. The heating of the dormitories is done with this stove. The flue goes up through the centre of the fire-place flue. The flue is two feet square, and we get excellent ventilation. There is no waste in the fuel because the fire is not kindled until about half an hour before the boys go to bed. The ventilation is the best of any dormitory in our institution. The climate is very severe, like Wisconsin, or Minnesota. We are twelve hundred feet above the sea. That fire at night, when the stove is filled with wood and shut off so that it burns slowly, warms the room sufficiently, and in the morning a boy opens the stove before the others get up and it is comfortably warm for dressing.

Conditions there are absolutely primitive. We have no electric light plant, but use kerosene lamps made of very strong metal; and, unless there were a wanton destruction of the lamp, I hardly see how any accident could happen. The falling of the lamp could do no damage.

The first group has been in operation since a year ago last January. We have learned a good many things about farm colonies. I had to change my notion about the number of people to be employed. In our state it is not feasible to suggest that a man who is attendant on the boys all day, or who goes and works in the field with them, should stay with them until nine at night; and we have gradually increased the number of people caring for them until now we have a matron, a cook who is a woman, and two female attendants, who have charge of the dormitory work and who will relieve the matron and cook. If it were not for the necessity of recreation we might have a smaller number of attendants. We employ three men where we could get on with two men. When we observed the physically nervous condition that our men would get into from working long hours with feeble-minded boys and successfully keeping them employed, we decided to add a third man.

Those boys have worked every day since they went to the colony, and they put in long days' work. We have not done much farm work yet, but we have put in our mains and sewers and done a large amount of that sort of work.

As soon as we got the first group of the colony in we began preparations for the second. And there is a large amount of work where you have a separate water supply and sewage disposal. The first two are two miles apart. The second colony is practically like the first. We took an old farm house and made a boys' dining room. We now have one hundred inmates at the colony and before fall we expect to add about eighty more. The supplies are all bought and furnished from Waverley just as at our farm house there. The monthly requisitions cover the principal wants. Groceries are ordered as for the school and sent direct. Broken packages are sent out first to the local buildings. We have not found the slightest difficulty in doing this. The marketing is done a certain day and certain things are sent by express. We found the express charges very small. We receive from the colony every

morning an itemized report, and from the matron and foreman one every twenty-four hours.

The cost I am not able to tell. I have ostentatiously avoided being able to tell the cost up to this time. In our state it would not be desirable to prove that you could run a colony too cheaply. I have no doubt that our expectations have been more than realized, but we know this: I requested the builder to make an estimate of the cost of the work which they have done at the colony and his estimate was—and we have every reason to believe that it is correct—that the cost of maintaining those fifty boys for the period they had been there is less than it would have cost to have paid for the labor they have done. That is a way of getting at the market value of what the boys have done. This year we are beginning to farm on a large scale and we shall be able to tell in a year or two something about the cost. That is a question we are not anxious about because we have demonstrated to our satisfaction that the colony scheme is not going to be an expensive way of maintaining the boys and that it will be much less than at the parent institution.

A second test of the value of the colony was whether we could keep those boys who were accustomed to institution entertainments and the life of the institution on the top of a mountain in the country with only boys like themselves, happy and content. Some of our good friends thought that we were making a great mistake, and I had some doubt myself and that is where I found I had to have a little larger staff than I had anticipated. Each evening one assistant is detailed to help in this and we take pains that he shall not be worn out by a long day's work. Preferably we choose a woman to have care of the entertainment for the boys in the evening. We have selected perhaps fifty or seventy-five volumes of boys' stories and from the beginning every evening a woman has read aloud a certain number of chapters. They have read book after book through, and it is a settled thing now. I think these continued readings have had a great deal to do with the content of the boys. We have an organ and several other musical instruments, and every evening there is a half hour of song. After the songs it is a settled policy to play games, cards, dominoes, checkers. It is easy always to organize such recreation for boys, it is not always so easy to keep the work up, but the matron's report shows that it has not lapsed there. Our report every morning provides against that. Unless you have a plan like that the tendency is after awhile to drop such things. The best boys we have ever had are the boys in the colony and none of them would go back to the parent institution if they were given a chance. They are happier than any boys of that age and class that I have had in the institution.

Another bug-bear I had anticipated was difficulty in getting employes. The colony is three miles from the railway station and two miles of the way there are no houses. It is all up hill, a long sandy road. I have, however, no difficulty in getting employes. The fact is that the colony is the popular branch of the institution for the employes. There is only one grade of employes there. None of the delicate questions of rank come in. There is a wholesome atmosphere which reacts on the children and makes possible an amount of zeal and effectiveness in dealing with them which the machinery of the large institution is apt, perhaps, to cover up. We have

selected from the parent institution the very best of our employes to go there, and we have made it an unwritten law that they must have served at the home school before they go to the colony. We admit no boys directly to the colony; they must go by way of the school and have had a variety of discipline and training before going there because the conditions of life are so simple. They have no restrictions, except that they must stay on our own land. They must not go down on the main road nor leave our territory, but, provided they obey this rule, there is no objection to going where they choose. It has a great charm for the boys,—the freedom which they feel.

Dr. Lawlor: What number of the children of the parent institution are eligible to go to the colony? How long are they required to stay in the parent institution before going? We have three hundred and twenty-one boys at our institution, and I do not think we could have more than thirty-five that we could trust to make this attempt.

Dr. Fernald: We carry out the industrial principle at Waverley. We build the institution there.

Question: From how many boys in the parent institution did you cull those?

Dr. Fernald: We had there three hundred and seventy-five boys. We do not care to rob the parent institution of all the workers, but we expect to transfer from fifty to seventy-five next spring.

Question: When your land is cleared how many boys can you keep there?

Dr. Fernald: We believe that two thousand acres will care for from twelve to fifteen hundred boys.

Question: Of what grade?

Dr. Fernald: The first group was made up of twenty-five of the brighter boys and twenty-five of our low grade. The second group were boys who had never been able to read or write, but who had managed to get an industrial training. We have made it a point for many years of having the teachers go out with lower grade boys and teach them the simplest forms of manual labor. The simplest exercise is to get those boys in a row with a piece of scantling in front of them to keep them in line and give each of them a grub hoe, a very primitive implement, and teach them how to use it.

Mr. Alexander Johnson: That is the kind "The Man With the Hoe" used.

Question: What is the scantling for?

Dr. Fernald: To keep them in line; if you don't have it in thirty seconds they will go in every direction.

Dr. Lawlor: Do you have any objection to this sort of work on the part of the parents? It would raise a howl of indignation in California to ask these boys to do manual work.

Dr. Fernald: There was great prejudice when we moved into the country. In our reports we explained to the parents and to the public the necessity for that sort of thing. If you wish to really reach the feeble-minded boy you must do it through work, for you can do it in no other way. We have a public sentiment now which thoroughly backs us up. I have not heard a word of complaint from a parent for years. We wondered how it would be in

sending them to the colony, but we found that the parents of the children were perfectly content with the work they are doing there, and they do good work. I believe our hundred boys will do as much work as one hundred laboring men that we could hire in that country community. It is not as intelligent and it can be easily wasted and diverted, but when it comes to actual work units I believe they are capable of as much work as we are able to hire in a Massachusetts village. That is a qualified statement, because the laboring man means to do very little—the unskilled laboring man.

We found that if those boys had to do that kind of work that we had to re-consider the question of diet. With a breakfast of cereals and bread and butter and coffee there was not enough to keep him at work from 7:30 to 12:00 o'clock, and we had to provide for more nourishing food than the average institution affords. When you consider the extra amount of food that a feeble-minded boy eats, anyway, it means quite a difference in the provision you have to make. But it is a very necessary thing. The institution dietaries are generally based on the needs of a person who leads a quiet life.

Dr. Rogers: Have you any definite data in mind with regard to meat? How much meat per capita do you give them?

Dr. Fernald: They have a beef stew, for instance, and for fifty boys fifty pounds of beef go into that stew. I have not been able to convince the matron that that can be kept down.

Dr. Polglase: Our boys doing heavy work have meat twice a day.

Dr. Lawlor: We do the same.

Dr. Fernald: It seems as though these boys required more fuel to make them go. It is marvellous the amount of food they eat, digest, and assimilate.

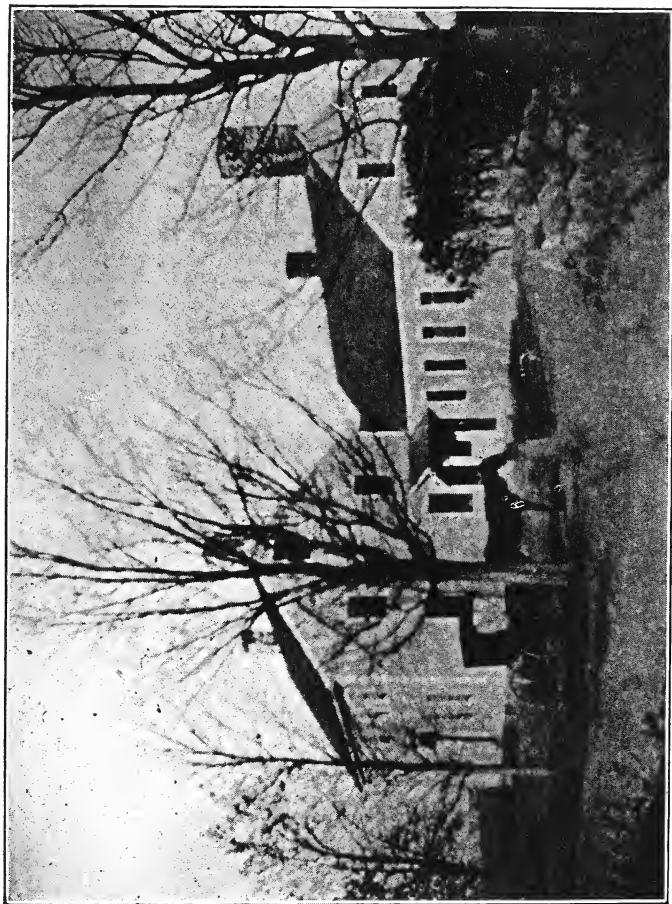
Dr. Lawlor: The thing that strikes me as remarkable is the number of boys who can do that kind of work. Most of our boys cannot pick up an apple. They cannot pick it from the tree. If they try to help in picking fruit they have to have a corps of people with them or they will destroy more than they will pick. You must have a different class of boys in Massachusetts.

Dr. Fernald: I think we have a lower grade of boys than any other American institution. The brighter imbeciles do not come to us. They go to the house of the Good Shepherd or to the Lyman School.

Dr. Lawlor: We have no non-residents in our institution, but from three hundred and twenty-one boys we could not get more than forty-five or fifty who would do that kind of work.

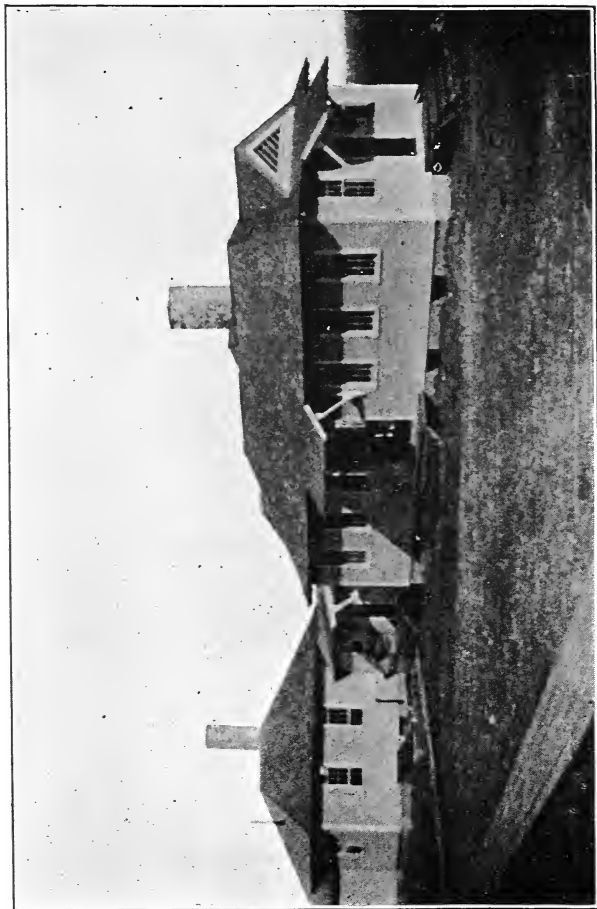
Mr. Johnson: In a few years you will change your mind. Nothing is more gratifying than to see how much work can be got out of the lower grade children. It has been a constant surprise. We have girls ironing today who several years ago could not do anything but pull a floor rubber, and now they are competent to do good work.

Dr. Fernald: I have always been interested in the employment of the imbecile, and I have personally put a good deal of time and work into it. You have got to begin with them when they are young. Our stone piles at Waverley are pretty nearly the first steps to industrial work. We have two



NARRAGANSETT HOUSE AND DINING ROOM ANNEX

(Narragansett Group, Templeton Colony.)



DORMITORY COTTAGES
(Narragansett Group, Templeton Colony)

circles of stones about thirty feet apart. We fill one of these circles full of stones about as big as a man's head. Then all the stones of one circle are carried to the other side. And the boys get a lunch and go home. We begin with many cases so low that the teacher has to put the stone into the boy's hand and hold his hand on it to keep him from dropping it and urge him to drop it in the right place. It is surprising how few catch on to the idea of carrying these stones. That is the primary lesson in our industrial training,—that stone pile. But you must realize that that is not to be done long, and the sooner you graduate him into doing work with some purpose the better for the boy and the more interest he will have in it. At least fifty of the hundred at the colony began their training at those stone piles. The boys at the colony who are now putting in a good day's work began with our stone piles ten or twelve years ago, and but for that training we should not have been able to teach them the many things they have been able to learn. They would have been typical almshouse idiots and would have sat on the benches all day moving only to their meals. It is owing to work alone that their physical condition has been improved and their untidy habits have disappeared.

Our colony has grown very slowly. We have felt that it was an experiment, and that we could not afford to have it fail. And we have resisted the temptation to push the development too fast. We expect eventually to have six or seven hundred in the colony.

Question: Do you put high grade inmates into your colony?

Dr. Fernald: A few of them.

Question: Do they disturb it?

Dr. Fernald: I have transferred one boy back, and one boy I have sent home as unsuitable for institution life. We tried him in Waverley. He was a troublesome fellow. Our high grade boys have been contented at the colony. They are not tempted by seeing people from the town or a large number of visitors. They have practically everything that is to be had in the community. Their life fills their wants more than one would think.

In a country village when boys get to the period of adolescence the normal boy likes to show off before his young lady friends. I have learned that these boys in that period of development show their restlessness in attempts to run away as a bit of bravado,—they like to show off before the girls in the institution. They are much more simple and natural in the colony, and that desire to show off is entirely absent. That is very striking.

Mr. Johnson: We have twenty boys in our colony, in a farm house with rooms upstairs. It is a little domestic place with a man and wife in charge. They have a chicken farm and are raising tomatoes, cabbages, and other garden things. The cooking is done in an old-fashioned way on the cooking stove. The boys are of different grades. I should prefer to put them in a brick house on account of fire, and we could build one as we make our own brick. We have only about one-seventh of the land that Dr. Fernald has.

Dr. Fernald: What is your experience in the matter of help?

Mr. Johnson: We have about one to six. We could get on with fewer if our boys did not work.

Dr. Fernald: Yes, if you have boys to work and keep them up you have to have about that number of assistants.

Dr. Rogers: Do you try a man and wife at any time?

Dr. Fernald: I never employ a man and wife.

Dr. Rogers: Why?

Dr. Fernald: I should modify that. Sometimes people marry each other who are employees. We have now a man and wife who have come back to us in that way. But if you employ both man and wife, and get into trouble you have two people instead of one to deal with. If you would like to dispense with the services of one you must lose both. It leads to complications.

Mr. Johnson: So does every arrangement. The better your arrangement the more complex it is; just as it is with machinery. The machinery of the man and wife is more complex and it takes more oil to keep the bearings smooth. But there are advantages which seem to me to outweigh the difficulties.

Dr. Polglase: If you have a young man and a young woman in your colony without any head official I should think there might be a tendency to immorality.

Dr. Fernald: I employ as matron a settled woman who is equal to the supervision. I have had no trouble in that direction. The standard of behavior has been as high as at the school. A bill has gone through the house which provides that eight hours shall constitute a day's work for any employee in any state institution. If that becomes a law it will increase the number of our assistants.

Dr. Lawlor: We have the same law in California.

Dr. Fernald: That will add to our per capita cost. It will not pass this year, but it is probably bound to come.



THE EYES OF THE FEEBLE-MINDED

BY JAMES THORINGTON, A. M., M. D.

PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC
AND COLLEGE FOR GRADUATES IN MEDICINE.

IT IS not the purpose of the writer of this brief paper to take up at this time the consideration of the percentages of certain ocular characteristics among the feeble-minded, but rather to speak in a general way about the eyes of such unfortunates, and then in a future paper to present classifications and averages.

The following observations are the result of eight years study of the eyes of the feeble-minded in the two schools at Vineland, New Jersey, and the school at Elwyn, Pennsylvania, the total number of these children approximating two thousand.

FIRST, it may be stated that the eyes of the feeble-minded do not show any distinctive characteristics that would class the eyes as belonging to weak minds. This statement holds true for both the external and internal examinations of the eyes. A possible exception to this statement might be that the majority of the low grade children do not maintain fixation for any length of time, that their eyes "wander" or "roll." Otherwise the eyes of the feeble-minded are quite the same as the eyes of the strong-minded.

SECOND—The importance of the study of the interior of the eye of the feeble-minded never can be over-estimated. It often happens that the child is brought with a most uncertain or indefinite history as to itself or its parents, and in some cases the ophthalmoscope will give evidences of previous disease or an hereditary taint that could not be recognized in any other way. It sometimes happens that, because the child is feeble-minded, the eyes are ignored or neglected. But this should never be so. The eyes of every feeble-minded child should be most carefully examined, and the teacher and examiner should bear in mind that the eye is a principal channel through which knowledge is carried to the brain, and that the eye or eyes must be put in the very best condition possible to obtain instruction.

The writer has made it a point in his practice in the schools to make this examination promptly after admission. It is not always wise to place the child in too low a grade as regards its feeble-mindedness until the eyes have been taken into consideration. While admitting that many of these eyes do not show defects, yet those that do should have such defects corrected when it is believed that there is sufficient brain power present to appreciate the correction.

The following brief report, while that of an extreme case, is a case in point. One year ago the author was asked to see in consultation, a boy twelve years of age who had never walked and had been pronounced "a low grade feeble-mind." The child's parents were both in perfect health. Almost from the first day of birth and for the first eight years of life, this child had several convulsions each day. The birth was instrumental. This lad had never walked; his left arm and both legs were practically paralyzed, and in a condition known as "athetosis." The right arm was a useful member. This lad was wheeled about in a chair by an attendant who had to minister to his every want. The boy's vision was known to be defective and presumably near-sighted, but nothing of any moment was ever done to find out just what was wrong with his eyes. When the boy's mother stood ten feet away from him he could not recognize her from any other woman unless she spoke to him. This boy had never seen the leaves on the trees; he had heard birds sing, but had never seen them; toys and other objects, unless very large, he soon laid aside without manifesting much interest in them, as a normal child would have done. Several examinations of this boy had been made from time to time by specialists, all of whom gave a most unfavorable prognosis. This patient, when spoken to and called by name, had a habit of squirming about in his chair and rolling his eyes in various directions, while at the same time he would mumble words that could not be understood except by the trained ear.

The examination of the eyes revealed the hidden cause of many of this

patient's peculiarities. There was a lamellar cataract in each eye that had not been previously diagnosed. In brief, the condition was explained to the fond parents, who promptly agreed to the removal of the obstruction to the child's vision. The writer removed the cataracts and the most happy results followed: that is to say, since the proper adjustment of glasses this child has learned to read and write, to write a letter on the typewriter, to read music, and to play the cornet, of course using his good right arm and hand. His sight is now excellent; he sees the leaves on the trees, etc., and many other objects that he had never seen before; in fact, as his mother and father say, "he sees everything and wants everything." This boy's physical condition, taken with his "gawky" appearance and unsteady, rolling eyes, previous to having the cataracts removed, were signs in themselves quite sufficient to give a hasty diagnosis and most unfavorable prognosis. The patient by the cure of his eye condition has certainly become a high grade child.

In regard to the adjustment of glasses to the eyes of the feeble-minded much may be said.

FIRST, it is worse than useless to expect glasses to do any good in the very low grades. No matter how much these glasses may be indicated by the optic condition of the eyes, the child has no appreciation of the fitness of things, and will proceed at once to break the glasses and bend the frames into a useless mass of wire.

SECOND, in the middle grades, glasses will frequently be tolerated and prove of benefit in giving the child improved sight, relief of eye strain, and thus give the patient more freedom to use his eyes, which he would not do before and was unable to explain why he did not.

THIRD, among the high grades, glasses are certainly a boon when they are indicated. This statement is not expressed off-hand, but has been verified time and time again by many of the teachers who have the opportunity to watch the child's application and progress after glasses have been prescribed, and comparing these with the child's previous record.

In conclusion it might be well to mention the fact that in ordering glasses for these children two factors must guide the oculist; one is the amount of eye-strain that is to be relieved, and another, how much the vision will be improved. When glasses give a decided improvement in the vision the glasses should be ordered, but if the improved vision is but slight, then it is doubtful if the child will wear the glasses. If the relief to the eye-strain is considerable then the glasses are usually enjoyed, but if the relief is slight, as indicated by a weak strength of the glass, then they should not be ordered.

DISCUSSION

Dr. Polglase: We often find children who want to wear glasses and where they are of benefit they should be given, but where the child will destroy them or where the eyes are not to be much used they should not be given.

Mr. Johnstone: We have had two cases where children were improved to a great extent by the use of glasses, even more by being granted the privilege of wearing them than by the actual use of the glasses. Another

boy has had his glasses brought to the office four times within eighteen months a perfect wreck. But because they seem to do him so much good we tried him again and for seven months he has not broken them.

Dr. Wilmarth: I have some old pairs that I sometimes lend to the children.

Dr. Henninger: In our institution a number of the children have been fitted with glasses and though in many cases we had poor results from the fact that the glasses were destroyed, some of them were so much benefited that we were well paid for the time spent in fitting them. I think it is desirable to take the risk of breaking a few pairs if we can enable some of the children to see so much better.

Dr. Keating: I have had a number of cases examined, but the children did not want to wear the glasses. They interfered with their play and work so that all the time they wanted to pull them off. I think there is not enough probability of their wanting to wear them when they do not need them that we need to fear to fit those who do need them. As a matter of fact many of them do need glasses. You will notice it as you go through most institutions where there are children. You notice it by their position.

Mr. Johnstone: One of our large boys who knew better had broken his glasses three or four times and was told if he did it again he would have to go without them six months. A few days later he got into a quarrel with another boy and the other fellow pulled this boy's glasses off before he struck him in the face. When asked why he pulled the glasses off he said it was because he knew the other boy would have to go without them six months if they were broken.

Dr. Keating: The subject of glasses is a great problem with the epileptics. It seems as if they always fall on their faces and break their glasses.

Mr. Johnstone: We have some cases where parents want the children to wear glasses when they do not need them. We have others who wear them all the time. We keep the glasses repaired. We have one boy who works with the carpenter who is of no value without glasses, but very efficient with them.

Miss Wright mentioned a case similar to the one mentioned by Miss Morrison.



SPECIAL CLASSES FOR FEEBLE-MINDED CHILDREN IN THE BOSTON PUBLIC SCHOOLS

DAVID F. LINCOLN, M. D.

THE schools which I have been asked to describe are essentially similar as regards the character of their pupils to those known in Germany as Hilfs-schulen, and in England as special schools for feeble-minded and backward children. It is unnecessary to describe these schools,

which have been in existence a considerable time, and assumed an important position.

The credit for establishing classes for backward or feeble-minded children in connection with the Boston Public Schools is due in the first instance to the Superintendent, Mr. Seaver, who, with the sanction of a special vote of the School Board, engaged a teacher in the fall of 1898, and placed her over a class of fifteen children in January, 1899. Since then the classes have gradually increased to their present number of seven, placed at widely separated points in Roxbury, the South End, the West End, East Boston, South Boston and Charlestown.

The original plan was very simple. The best possible teachers were selected,—women of experience in their profession, acquainted with kindergarten methods, some of whom had been trained by regular service at Barre and Mrs. Seguin's school, while others had been sent by the Board to spend three months in residence at Elwyn previous to taking classes in Boston. The teachers thus chosen were practically allowed to act as their own judgment dictated. There was no requirement, scarcely even a suggestion, as to the results to be sought, or the methods to be used; the work to be done is very much the same as in state schools for feeble-minded, and such differences as may be observed between individual classes are chiefly matters of detail and personal preference.

Previous to the appointment of the first teacher, Miss Daniels, the names of two hundred pupils had been secured from the masters of schools as unsuited for being taught in the regular classes. From these, after examination, she picked out fifteen of the most urgent cases and became their teacher. Other classes were formed at intervals; and, about three years later, a second inquiry elicited a new series of cases, of which about two hundred have been carefully studied by Dr. Arthur C. Jelly, acting as an unpaid volunteer. A considerable number of the latter have been sent to the State School for Feeble-minded at Waverley, and others have been placed in the "special" classes we are now describing.—It may be well to state here that no properly descriptive name has been attached to these classes; they go by the rather indeterminate designation of "special" classes.

By way of illustration of the history of such a class, let us take the one originally formed by Miss Daniels. During the four and a half years of its existence it has had twenty-seven pupils, of whom fifteen remain; two have been sent to Waverley, three transferred to other classes of this type, and two to private schools for the feeble-minded, while one has died, one disappeared, one left on account of ill-health, one for home employment, and one on account of reaching the limit of age, sixteen years. They have been admirably taught, and yet, at the average age of nearly twelve years none can now do first-grade primary work efficiently and at the normal rate of speed, and none are in any single study much beyond the attainments of that grade, except in manual work.

In the same class three years after its foundation, there being at the time fifteen members, it is stated that two had had rickets, six convulsions, one epilepsy, three were seriously deaf, four had difficulty with the ordinary movements of walking and skipping, ten spoke with defective articulation,

two had deformed palates and only three had good teeth.

No body of persons outside of the School Board has taken any part in the organization, or directions of these schools. Several rooms have been offered by charitable friends, one of which has been accepted and is now in use; but for the present it is not probable that the number of seven classes can be increased. One society gave fifty dollars to be expended by the teachers at their discretion. Another society is caring for ten selected children on a farm for six weeks, under skilled control, in hopes of permanently raising the physical status. Under the care of their teachers, two small groups will also be taught gardening this spring.

No appeal has been made to the public; the formation of a "movement" has been rather deprecated, from the feeling that unguarded statements easily might be made which could be misunderstood by the parents, and might awaken feelings of distrust.

The teachers have all felt it one of their duties to maintain friendly acquaintance with the families of their pupils. They have succeeded in winning the confidence of the mothers in a most satisfactory way. In another respect the situation is not quite so pleasant. The rooms used are in the neighborhood of regular grade rooms, and many of the children come more or less in contact with normal children. In some cases unguarded expressions have been used by superiors, which have had a bad effect. In one school, the special children cannot be induced upon any errand to enter a regular classroom. In most cases they have recess at a different time. But, as a general thing, there is little or no unpleasantness from contact with other children; and in one class the children play freely at recess with the whole school without the slightest trouble. This, by the way, is a class of girls, the only one in which there is a separation of the sexes, and is in a girls' school building.

Several children are expected (the number I think is three) to be replaced experimentally in grade work next autumn. This will be the first experiment of the kind. It would not be unfair to state that most of the children in these classes are doing less work in number and language than the average primary child of five or six years; and this in spite of vastly superior opportunities for making progress. Those who can be sent back to the grades to work successfully with fifty other children are the exceptional few and are found chiefly among the youngsters of six to ten years.

For a few who are too old to be suitably placed among primary children, there remain the ungraded classes. Such classes are established in every school district for the benefit of those who may be ignorant of our language, or who from neglect or slight backwardness require some individual training to enable them to re-enter grades. The number of pupils to a teacher is supposed to be limited to thirty-five. A sharp distinction is to be drawn between these and the seven special classes which form the subject of this paper. Two or three children from the latter probably will be entered in "ungraded" classes.

It is desirable, I think, that the public should correctly appreciate the point of view taken by the founders of this group of schools, in so far as it is possible to give definite statement to the purpose held in view. FIRST, then,

let it be fully understood that there is no compulsion exercised, and no parent is obliged against his will to send his child to these classes. NEXT, as regards the kind of children. The classes are *not* meant for those who, however dull, can be reached by regular class work skillfully administered. They are not, on the other hand, for those who are practically unteachable. It is, unfortunately, the case that this condition has been hard to fulfill. Some low grade cases have been admitted to relieve the regular classes from a burden; others after a faithful trial have failed to develop even a moderate capacity to learn. There are, therefore, a certain number of low grade imbeciles still in the schools—such as are popularly termed “imbeciles”—for whose presence no one can be blamed, but whose destination is obviously some place of detention, such as Waverley. Some of these children are very serious annoyances to their classes. It is the present policy, however, as I learn from Dr. Jelly, to admit to the classes only the distinctly improvable cases.

It is not worth while to enter minutely into a description of the educational plan before an audience already familiar with the subject. The methods are those in vogue in all modern schools for the feeble-minded in America. Kindergarten apparatus and occupations are favorites from the beginning, owing to their great objectivity, and their power of training the sense of sight, the touch, and the co-ordination of the fingers, and the appeal which they make to a child's profound instinct for construction. The incidental aid to learning numbers is an important quality in kindergarten work. It is difficult to see how we could dispense with this aid. Sewing, knitting, and recently weaving in small frames, are taught in all classes. Basket work in raffia and reeds is one of the foundations of the whole work, and perhaps no single thing seems more educative. It is besides easily taken home to be finished. There is at present no attempt to make a salable product, nor is much attention given to decoration of the basketry, but rather to good construction and true form. Sloyd is taught in an elementary and modified way by the regular teachers, and is much valued; its best product is doubtless seen in the making of little stools, doll's furniture, boxes, and the like, and it takes a powerful hold of a certain number of boys.

As regards clay modeling, a certain class has been instructed for two or three year by the same person who teaches it to grades in adjoining rooms. The improvement in this case has been gradual, but of late certainly remarkable. The teacher considers that these children, averaging eleven years, have made as much progress in clay work during the last year as her third grade primary classes at the age of eight. This, for a class which is distinctly a slow one, is remarkable evidence of the power we gain by appealing to the material and manual side of training with feeble-minded children.

Singing is carried on in spite of the partial lack of pianos. One or two teachers have had the benefit of a friend's visits, who comes to play to the children. I have seen a class singing scale exercises well in response to the number of fingers held up by the teacher. The kindergarten ring games are not much in use for want of suitable rooms. Gymnastic apparatus in moderate amount is being introduced. The bounding of rubber balls to music or in song time is a stimulating exercise.

The one session plan was adopted at the beginning to accommodate those

whose homes were a long way off. The school hours were from nine to twelve (now nine to one), with a recess of twenty minutes. It is thought inadvisable to protract the school work until two o'clock; there is quite enough strain on the teacher and pupils, as it is, during the last hour. If the time were lengthened, the ordinary two sessions (9-12, 2-4) could be adopted, with increased use of gymnastics and games to occupy the added time, but there seems to be no pressing need for this extension.

There is no gradation, except such as the individual teacher finds convenient for her own purposes. Each class is in the position of a country district school, with children whose ages vary from five to fifteen. The advantages of grading are too obvious to need arguments, but grading seems out of the question at present. Concentration in a single locality would involve the difficulty of transportation. If a second room and teacher could be placed side by side with each class as now existing, the grading then possible between these pairs of rooms would do much to increase the teacher's power. But circumstances and material limitations are stronger for the present than best wishes.

In a few instances one is painfully struck with a case which seems to call urgently for special private tuition; for a solid quarter or half-hour given exclusively to the needs of one child. But the individual variety found in even one class is so great, and the claims for attention are so numerous, that it sometimes seems impossible to give any one child five minutes special teaching. There is one class in which nine of the pupils in reading have to be taught independently; the remaining six forming a group who work together. It is a teacher's aim to form such groups; and when all can be set to one task as can be done in drawing or modeling, she is for the moment comparatively free from distraction.

It is impossible to fix a uniform program of study for these irregular fluctuating classes. This is obvious, if we consider the differences between them. In the matter of physical excellence, one class leaps from eleven to twenty-four inches with a short run; others contain numbers of the physically incapable. One class averages considerably older than another, and, as a rule, the older ones are the less promising. In a certain class a group of half a dozen little ones contrast surprisingly with three unimprovables, one of whom has to be led by the hand from inability to remember her way about the room.

There can be no universal rules for governing exceptional children. A teacher who relies on cut and dried methods will surely fail; tact and sympathy are absolutely indispensable, and a readiness in resources to meet new exigencies.

The fondness for constructive work with the fingers is a most potent instrument for gaining control over a wayward child. There is a boy, ten years old, whom the teacher describes as possessing a negative will; he would get through the school exercises if allowed to take his own occasions—but the teacher's time was never his time, and he was extremely obstinate when forced. For about a month the teacher tried giving him no commands, but taught him basketry and other forms of hand work, in which he showed intense interest. From having been a truant he became the most regular attendant in the class. He would arrive a half hour before school and begin work, and beg to be

allowed to remain after school to continue it. He also began to take active interest in reading, spelling and number work, and strove to excel in these. He has now completed the Primer, can write a hundred words to dictation, and is subtracting numbers below a hundred. "I do not advise sending him to a grade at present," adds his teacher, "because I think the only way to keep his interest is through handiwork." The last sentence is interesting, as being the duplicate of another teacher's opinion of her entire class. Another boy, six years old, it was said knew nothing and would do nothing but lie on the floor. He was treated with peg board color study, and the like, and is now an enthusiastic and successful student of Cyr's Primer.

Feeble-minded children, as you well know, are not easy subjects for discipline. If they come from schools, as is usually the case, they have often been at cross-purposes with their teacher; they have been petted at home, or else bullied and abused, and their naturally unruly, mischievous, restless tendencies have never been properly handled. The first task before the teacher placed over a newly formed class is to bring it into line—to accustom the children to orderly behavior. In accomplishing this it is necessary to employ various devices, among the best of which are games and gymnastics in which almost all children submit readily to the understood rules of sport or drill. Elementary Swedish gymnastics accustom them to prompt obedience. Marching to a drum or piano gives a habit of regulated, shared activity. Games of ball, races, leaping, etc., give the habit of attention, continuity, orderly self-restraint.

Muscular acts are the expression of our entire voluntary and moral nature. Children who respond to no other stimuli will react to such as influence the muscles, and the entire basis of mental training must be built up on such foundations. In making these efforts to bestow on feeble minds the best possible education, we reject at the outset the old idea of education, as equivalent merely to reading, writing and arithmetic. These children will seldom reach proficiency in such directions; it is in the moral and manual sphere that they need development, and will best reward our efforts. The habits and practice of industry and punctuality, control of passion, truthfulness, friendliness, respect for law, self-respect, self-knowledge, appreciation of social duties, desire for usefulness, capacity for self-help and appreciation of the law of compensation and retribution—such are the teachings of which they most stand in need, and by which they are now being trained.

The scholastic work proper is not neglected—it is constantly in evidence—and its influence strongly corroborates that of the manual training. It is, however, less within their mental range, and affects them less. The idea that a child may be returned to regular grade work is a tempting one, as offering a means of making a record for the teacher. But teachers honestly see what is before them, and invariably place the bodily appeal above that made through books and pen. If I were to tell the truth as it seems to me, I should say that the subjects of the curriculum were—physical training, music, self-control, attention, and manual industry, with elementary number and primer work, and general facts about the clock, the calendar, animals, plants, etcetera.

After so faithful and continued an experiment, we are entitled to ask for

results. What has the system of special classes done?

In a wide way, it has accomplished that which formed the first motive for its foundation—it has removed more than a hundred very trying pupils from the regular classes and has added by so much to the teaching power of the regular instructors. This may be held in itself a sufficient justification for the outlay.

Next, it has done a great deal to open the eyes of the public and of the teachers themselves. Every contribution of this sort must be welcomed by those who know how very much the public needs to be educated in regard to the presence of the feeble-minded class and its possible danger to the common interest.

Third, as regards the welfare of the children concerned. A small number have been removed to the State School for the Feeble-Minded, to their great advantage. More would be sent if there were room. There are also in our special classes a very few children who attend the ordinary classes during the afternoon, and who possibly may be returned to grade-work later. The younger they are, the more hopeful their cases. When you have a class averaging already eleven or twelve years of age, who have been trained for a year or two in these schools and who now are at work in a *first book*, you are apt to have material which cannot be placed with any graded children. You can say if you choose that in a year's time they have gone over as much ground in the book as some normal children do; but this progress has been made at the cost of strenuous, patient, individual teaching, quite different from that which will be their portion in the graded class of fifty. Then, too, a child of twelve is entirely out of place with children of five and six. But when a child of six or eight, with a special teacher, makes rapid progress through his first book and early number work, his case is much more hopeful.

What shall be done, after all, with the greater mass of unpromotable cases? Shall they remain with their kindly teachers till sixteen years of age? And what then? It must be distinctly understood that there is no attempt made to teach these children an independent trade. The attempt would, in most of the present instances, prove futile if made. This we can infer from the known incapacity of the children; and we have enough confirmation in reports which come to us from Manchester, England.

As a whole, these children's proper destination is custody and a guarded existence. But we should discriminate here. A few quite imbecile children are plainly subjects for an asylum. There are many more whose appearance does not convey that impression at all to the casual visitor, and whose parents cannot see their defects in the true light. Speaking more particularly of girls. I have now in mind several who, though interesting to the eye, are distinctly and hourly in need of protection, owing to their childish and pliable, rather than vicious, natures, and whose fate it will be easy to forecast if that protection be not given. I regret to say that the family does not always give it. Still, there are others who find in their own families just such guardianship as they need, and could not be better off than with their own families for the present. No policy can be satisfactory which omits to consider the large number of children whose parents do not consent to their going to asylums. The oversight of children of this sort, after leaving these classes, is a

matter not yet planned out, and hardly yet thought of. In some way they ought as far as possible to be kept in view, lest upon the death of guardians they fall into misery.

There is assuredly a brighter side to the work. A certain small number of children—I recall several—have been brought to these classes, who bid fair to turn out valuable and virtuous members of society. There are always a certain number whose weakness is due to previous illness, to deafness, and similar defects; not to speak of the possibility of a child taking an unexpected start in mental growth, and developing genuine ambition.

There is not room at present in the state institution for the large number which even Boston could contribute. This being the case, it seems to me that the next best thing is being done in the way of raising the moral tone of children, and making them more capable in their family life. They may forget how much eight and three make, but they will not forget their good manners, nor their sewing and darning, and they will never again be the helpless loads they once were to their families. A few will earn small wages in shops; some will be valuable at home. Probably very few will marry. If we had a law for the custodial care of the adult feeble-minded women, a chief danger would be removed.

DISCUSSION

Dr. Barr: When Mr. Seaver, of Boston, first proposed sending me teachers to train I was appalled. I consented to do it on condition that I could have them under my absolute control and could have women of cultivation and refinement. He sent me most delightful women in every way, earnest, thoughtful, capable, hard workers. I insisted that they should follow our classification. I gave them clinics and laid out a course of reading for them and had them spend a great deal of time in manual training and sloyd work. It was a valuable experience to them. They stayed three months and I hear from Boston that they are doing very well, using Weir Mitchell's motto that "the working hand makes strong the working brain."

Dr. Rogers: I have been intensely interested in the work of the public schools of Boston. During the past few years there has been a growing disposition to get away from the old terms. We can not get away from the unpleasant reflections which follow the use of the word imbecile. It is very difficult for parents to realize that their child is feeble-minded. They always speak of him as being just a little "queer;" as being bright, but not learning well at school. There is no one so ill-fitted to train a backward child as the parent. There are rare exceptions. But the mother who would naturally do this work is usually overworked and she has not the time to give the intelligent training necessary. The development of these schools is in the line of evolution. It is one of the things the public has been needing for a long time. We do not come in contact with public school teachers as we ought. They seem to consider the backward child as almost inhuman, not a part of the race, as some people look on an insane person as a different animal from ourselves. So there has arisen this barrier between the public school work

and the work of the training schools for the feeble-minded. These special schools are bringing the work into closer contact and it confirms the conclusions which we long since formed as to the results we are after. What is to be the final outcome? I think these schools can act as clearing houses. A good many of the children will come into institution care permanently. Others can get sufficient training to be returned to their homes, just as we occasionally find in our institution work now. Every superintendent can give examples of that kind, but they are in the minority. What we are interested in is the after-life of the children who shall be trained in these special schools.

Dr. Grossman: The number of children involved is much larger than most people appreciate. At least one per cent of the entire school population of New York city should receive this special training, and with fifty thousand children in the schools that would mean five thousand children in New York alone. And it has been shown that even that number is too small, the actual number for New York being eight thousand five hundred. It is difficult to say whether these children are feeble-minded or are dull. Many of the cases that have been reported to me were decidedly cases that should be in institutions for the feeble-minded and others needed a different kind of handling. Many of them are physically handicapped. A very large number suffer from adenoids. In one school within an hour, in a school of five hundred primary children, a very casual investigation showed me at least a dozen in different classes whose respiration was so stopped by adenoids that I wondered how they could breathe at all. Of course they fell below the grade. A large number have visual defects. Many of them can be helped by proper treatment. Others suffer from mal-nutrition and a different environment would help them. Unless cared for many of these children will become public charges in the future. They will either be placed in asylums for the feeble-minded or they will become paupers or even criminals. The state will have to take care of them in some way. A great deal more enlightenment is needed by the public that they may understand it is cheaper and considerably better to have them taken care of now than afterwards in penal institutions. I was struck by what Dr. Barr said about training teachers. It is a grave problem how to provide teachers for these classes. There are no normal schools where such teachers can be trained, where there is enough pathological psychology. Why can there not be arrangements made in schools for the feeble-minded for the training of teachers, those who would wish to prepare themselves for this special work in the public school system? The enormity of the problem and the great number of children needing attention in that respect are matters of great importance.

Dr. Keating: Baltimore is considering the matter of starting special classes in the city and I am in conference with them. I rather discouraged them at first, but since hearing the paper I am in the balance. There is one point that was not treated; the medical inspection of these schools and classes. A teacher cannot decide about these cases. What do they do in Boston?

Dr. Lincoln: At first nothing was done in the way of inspection, but within the last sixteen months Dr. Jelly has kindly and charitably taken upon himself the duty of examining all the children in these classes. The children

are taken to dispensaries for dentistry, and are otherwise looked after. Boston some years ago established a board of physicians who were to be at the public schools every morning at nine o'clock to receive from teachers lists of children who had suspicious appearances to prevent the spread of contagious diseases.

Dr. Grossman: In New York there is a body of physicians appointed by the school board, but they seem to look out mainly for infectious diseases. They discovered a great many cases of trachoma not long ago, and they look into such matters, but it is curious how even physicians sometimes may overlook such pronounced cases of adenoids, defective vision, and plainly physical defects as have come under my observation. How little teachers know of such things, and yet they are supposed to have some material care of the children under them! At Jacksonville I saw a boy about eight years old, in one of the schools, who was very naughty, the teacher said—bad tempered, vicious, etc. It took only two minutes to show her that the boy had extremely defective vision which was answerable for much of the trouble. It seems to me that teachers should receive more training in the recognition of obvious and ordinary difficulties and defects.

Dr. Lincoln: In visiting one of the New York schools lately I inspected a special class,—for they have several of those special classes there,—and I met one of the visiting physicians and saw what he did. About fifty or sixty children were brought out into the entry and he looked at them one after the other and so got through the string, but he did not see the children in the school. He saw only those placed before him for a special cause and that accounts for so many cases escaping the eye of the physician.

Dr. Carson: After the feeble-minded children are once separated from the other children I think it is important to have specialists go through the selected ones to examine the throat, the eyes, the nose, etc., for there is no doubt a great many could be benefitted by operations for adenoids, cleft palate, etc. The operation for cleft palate sometimes works wonderfully on a child. Often some trifling thing gives relief. I remember a boy who came to us with a favus of the scalp and after he was cured he at once brightened up and made such rapid advancement that when he went home for a visit they thought he was a normal boy,

Dr. Lincoln: If my wishes were carried out just that thing would be done. There would be a board of physicians visiting these schools.

Dr. Murdoch: That will probably come in time.

Mr. Johnstone: In our institution we have a system of examination by specialists with the idea of suggesting the proper procedure in each case. In the public schools of New Jersey I think the medical inspection is simply to guard against contagious diseases. I think those of us engaged in institutional work should do something toward helping along the idea that medical inspection should have in mind the general health of the children. It is a very important question. Then the question has been raised as to the ultimate outcome of these special classes. Dr. Lincoln says they may go on for a while, but it seems to me the question ought to be considered now. I will offer a suggestion from what we are doing in New Jersey. Twice or three times a year we have an informal meeting at our institution of the superin-

tendents of city schools of New Jersey, and there is always present a gentleman connected with psychological work. There this matter is talked of and this line of special schools is talked over with the idea that these men who speak at teachers' meetings shall forward the idea, for we must have more of this special instruction. As an institution man I think I am doing my work by making these men who conduct public schools go out and talk to their teachers and present these ideas. We have a special session for them at every meeting. We have had several visits from high school and primary teachers from Trenton to find out what to do with backward children.

Dr. Lincoln: Mr. Johnstone has shown how work could be done that would lead to something very fruitful. I shall ask him to write out in full what he is doing in the way of connecting his work with the public school teachers' work. If he will do that I will show it to Dr. Fernald, for it is not impossible that something could come of that in connection with our work in Massachusetts. School authorities move slowly and there are obstacles that we cannot always see, but things right themselves in time. There are other places where these special classes exist. There is at Springfield, under Mr. Balliot, one of the leaders in education, a successful class for defective children. In New York I have seen three classes and I understand they are very enthusiastic and something is coming of it. I had a letter from a lady in "School 77" who has two classes formed by herself, at her motion, and the school board is taking an interest in the subject. In Philadelphia there are five or six of these classes, but I am sorry to say they keep them five hours a day with only two intermissions of fifteen minutes each and I think that it is a mistake. I do not think there is much chance of ever making these children self-supporting. Some might be selected to learn carpentry or painting, but if you carry it as far as that why not send the children to institutions where they will be under care twenty-four hours, with far better results? Let us be logical. What is going to become of these children is very important and I acknowledge the truth of what has been said, that it is not well to defer the consideration of this question too long. As I come in contact with different members of school boards I find there is a fermentation going on, but the heads do not always think alike at the same time; but, I think in the course of a year or two, some things will have ripened and the influence of a discussion such as we have had today is helpful. I have been happy to add my mite, and I thank you.

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MINUTES OF THE ASSOCIATION OF MEDICAL OFFICERS OF AMERICAN INSTITUTIONS FOR IDIOTIC AND FEEBLE-MINDED PERSONS

The meeting was called to order by the president, Dr. J. M. Murdoch, at 9:00 A. M. May 15, 1903, at the Shoreham, Washington, D. C. Those present were Dr. A. C. Rogers, Dr. and Mrs. J. M. Murdoch, Dr. W. N. Bullard, Dr. and Mrs. H. C. Smith, Dr. M. W. Barr, Dr. A. W. Wilmarth, Dr. J. C. Carson, Mr. and Mrs. E. R. Johnstone, Dr. F. W. Keating, Mrs. Isabel Barrows, Dr. Mary Dunlap, Miss Mattie Gundry, Dr. A. H. Beaton. The fol-

lowing committees were appointed:

On Organization:—Doctors Wilmarth, Barr, Lincoln, Bullard and Rogers.

On Time and Place:—Doctors Carson, Keating and Mr. E. R. Johnstone.

A paper by Dr. W. N. Bullard on "The Importance of Well-Made and Accurately Reported Autopsies in the Determination of the Etiology of Weak-Mindedness and Idiocy," was read.

A paper on "The classification of Mental Defectives" was read by Dr. M. W. Barr, of Elwyn, Pa.

Dr. Carson proposed the name of Dr. Charles Bernstein of the Institution for Feeble-Minded, Rome, N. Y., as a member of the Association. Voted.

Dr. Bernstein thanked the Association and said that he was glad to be elected at that stage that he might take part in the discussion, for he had been much interested in Dr. Barr's paper.

A paper on "Morals," by Miss Alice Morrison, of Vineland, New Jersey, was read by Mr. Johnstone.

Mrs. Barrows said that she had been asked to get the opinion of the experts then in session as to the proper disposition of a small boy of fourteen, the son of a widow at work in one of the departments, who was disobedient, untruthful, dishonest, sly and without any touch of remorse for his wrong doing.

Dr. Smith of Illinois: Nothing but the grace of God can save such a boy—unless it is the navy.

Dr. Barr: Send him to the Naval School.

Dr. Murdoch: We had a boy of that type who was sent to the Naval School and who is now doing good service in the navy.

Dr. Smith: I know of three such boys doing well.

Mr. Johnstone: I know three others that have been sent to naval schools with satisfaction.

Dr. Keating: The trouble may be with the mother of the boy. A great many mothers do not know how to manage their own children. It is hard for the navy to say that that is a proper place to send such boys.

Dr. Barr: I quite agree that the navy is the best place for such boys. They are practically taken away from society and society is free from them. If they break down, they are taken care of and when they are well they are under good discipline. I have sent a number of cases to the marines and one is a bright and shining light. One such boy had charge of the recruiting office in Philadelphia during the Spanish war and when I called to see him and asked if the orderly was in, they said no but the *corporal was!* That boy was doing well. He had been one of the worst boys. He came from Washington at the same time with another boy. The other one went back to Washington and spends most of his time in jail: he is there at present.

Dr. Murdoch: I don't think a boy of fourteen should be considered incorrigible. He may develop into something better. I don't believe he should be sent to the navy at once. He should be surrounded with the best influences and stimuli and that may bring him to a recognition of the proprieties of life and he may come out all right. One or two lapses in dishonesty or untruthfulness are not enough to send a boy to a reform school or to the navy, but if

these depravities continue and interfere with society to such an extent that he must be put under control, a well conducted reform school is the place for him, possibly the George Junior Republic. That is an interesting organization which I believe is doing good work for such boys.

Dr. Smith: The reform school carries a life long stigma and the navy does not.

Dr. Rogers: No, it has a charm and carries pride with it.

Dr. Keating: There are industrial schools which carry no stigma. There is one in Maryland from which the boys sent out turn out well. One of them I know is today mayor of a town in Maryland. There is a George Junior Republic near Washington.

Mr. Johnstone: We have two boys in the navy now both doing quite well. Boys in the navy have to be obedient; they are under discipline and make the best kind of marines. They are protected from society and society is protected from them.

Dr. Wilmarth: Boys with tastes congenial are apt to associate themselves together. In every industrial school there is a class of bad boys and from these bad boys others learn more evil than they ever knew before. In the marines there would be few of any one class and the stimulus to rise is far greater in the navy than in an industrial school. I would say nothing against industrial schools. They are doing a good work, but a boy of that kind, who is a moral imbecile does a great harm in an industrial school.

Dr. Barr: If the mother of that boy will apply to Mr. John W. Douglass of the Board of Children's Guardians, Washington, he will be able to advise her what is best to do.

Dr. Tanner: I think boys under sixteen are taken on to the training ship. One could find out at the Navy Yard.

The president's address was then read by Dr. J. Moorhead Murdoch.

Adjourned at 12:30 P. M.

SECOND SESSION

The Association was called to order by the president at 10:00 A. M., May 16th. Dr. Carson moved that Dr. M. P. E. Grossman, of New York, be elected an active member. Voted. Dr. Barr moved that Dr. Archibald Douglass of the Royal Albert Institution, Lancaster, Eng., be made an honorary member.

A paper entitled "What Four Months of Training has Done for Walter," by Miss Fanny Compton, was read by Dr. Carson.

A paper on "Industrial Training," by Mr. C. Emerson Nash, of Vineland, N. J., was read by Mr. Johnstone.

Dr. Carson: I will report for the committee on Time and Place that we have invitations from Vineland and Faribault. We recommend Faribault as the place of meeting, but would be perfectly willing to meet in St. Louis, if that be the wish of the Association; the time of the meeting to be between May 15th and June 15th. On motion it was unanimously voted that the next meeting should be held in Faribault, Minn.

A paper entitled "Contributions to the Study of the Growth of the Feeble-

Minded in Height and Weight" by A. R. T. Wylie, Ph. D., Faribault, Minn., was read by Dr. Rogers.

Reports from States were called for.

Mr. Johnstone reported from New Jersey as follows: One of the most important things in our work is the question of appropriations. New Jersey has practically cut in two the appropriations for the various institutions in the state. We have suffered because of the refusal of the state to give proper fire protection. We have suffered from fire seriously this year. It seems short-sighted on the part of the state to allow this. Another thing of interest to us is the work of the probation officers in New Jersey. Through their efforts children are being sent to us from hospitals and from insane institutions and reformatories, and those who should be sent back to homes have homes provided for them. The New Jersey State Conference gives a large part of its time to considering defective classes and their proper care. In our own institution we are trying to rise from our ashes. We are putting up buildings to take the place of those that were destroyed.

Dr. Beaton of Canada:—We are not doing a great deal. For two or three years I was not satisfied with the work done by the teaching staff and in order to get a new staff the government had to close the schools. It was done at the time of the summer holidays. My trip down here is to select good, level headed women to take charge of the work there and re-organize it on a more efficient basis. So far as the institution itself is concerned we are doing good work. We have a magnificent place and try to take care of the inmates as best we can. A certain amount of training has been kept up. We have had a musician and a certain amount of industrial work and calisthenics. We have no difficulty in the matter of appropriations. We have six hundred and seventy-five inmates and they do a great deal in gardening, putting the grounds in order, farming, etc.

Dr. Keating:—The work in Maryland is going on slowly as usual. The last legislature gave us a small sum to commence the erection of an administration building. The legislature passed a law by which children who are twenty-one, if they are not fit subjects for going into the community, shall be reported to the Commissioner on Lunacy and the case can be reviewed and the child committed to an institution. We shall soon try it and see if the law will hold water.

Dr. Carson: New York is making some headway each year. Our institution at Syracuse provides for feeble-minded children supposed to be teachable. At Rome there is an institution for the unteachable of both sexes, and at Newark one for feeble-minded women. The Syracuse institution by reason of its location reached a point some years ago where it was impracticable to extend it, being within the city limits. It is surrounded on two sides by streets and on the other two is a public park. There are buildings enough on the ground for the acreage. The Rome institution has increased its accommodation one hundred. The colony for epileptics has been more successful in getting appropriations and enlargement has been more rapid there. The present number there is about eight hundred; at Rome, six hundred and twenty-five and at Syracuse, one hundred and fifty. At Newark I think about five hundred more or less. I understand that the Governor has allowed

the appropriation for maintenance of these institutions, but has vetoed appropriations for extensions and improvements.

Dr. Wm. T. Harris, Commissioner of Education, Washington, D. C., was introduced and invited to speak.

Dr. Harris: It is a great pleasure to meet with you a little while. You carry the flag which shows the high-water mark of education. The highest reach of civilization is realized when the benevolent feeling of the people takes hold of the unfortunate, unfortunate by nature, or by birth, or by some great calamity that has happened to them, and tries to find out what can be done step by step to bring up these children, to create souls, to strengthen their will power, and to improve their physique.

I remember what a great lesson it was to me when I visited the Institution for Feeble-Minded in Lincoln, Illinois, when it was under Dr. Wilbur. I learned more in one evening from him than I had ever known before about the reason for the perversity often seen in the elementary schools. I believe the greatest good possible is coming to the country from what you are doing.

The reports from states were continued.

Dr. Wilmarth: Four years ago an appropriation was granted by Wisconsin for the erection of new buildings, and these buildings are now ready for use.

Dr. Rogers: Since the meeting of the Association last year one of the chief incidents of our history in Minnesota was the fire which occurred in December and which destroyed part of our Main building. But although three hundred and ten children were in the building, twenty-five directly under the fire, all were removed without any accident. The fire was in the night, but it was controlled, and the rest of the building was saved. We are arranging to rebuild with our insurance and special appropriations. We expect to show you our new Assembly Hall next year. We are expecting to build a wing for tubercular cases in the hospital, which will provide much needed isolation wards. We have not adopted any new methods during the year. I am glad to note that Dr. Wylie has resumed his original research with me.

Dr. Grossman: We have had two cases of fires reported: were they incendiary?

Mr. Johnstone: Mine were.

Dr. Rogers: Mine occurred probably from the crossing of electric wires.

Mr. Johnstone: Our fires were both incendiary and in each case due to sudden impulse. A boy who was playing hide and seek crawled into the cellar window and found himself by the furnace. He poked the fire with a stick and the thought came to him to start another and he started it in the kindling wood. In the other case the boy found some matches which had been dropped by Italian workmen and he lighted them and threw them on the hay.

Dr. Carson: Last winter a boy who had some opportunity to go outside the grounds secured some matches. Two other boys concocted a plan to get hold of them and they got up in the night and stole them from his pocket and went into a toilet room and lit some paper and had the fire well started when one of the boys got frightened and told another boy that he thought there was a fire in the house, and that boy had sense enough to tell the attendant and it was extinguished. It was a narrow escape. We have a very

dangerous class of boys to deal with in that respect, and it is always dangerous for them to get hold of matches. Living in the city fires are frequently seen and talked about. We have made it a rule that whenever a fire is seen or the subject of fire comes up, there shall be no talking about it. Suggestion will often result in dangerous consequences.

Dr. Murdoch: Children are very ready to take such suggestions.

A paper on "Special Classes for Feeble-Minded Children in the Boston Public Schools" was read by Dr. D. F. Lincoln, Waverley, Mass.

On motion of Dr. Rogers, Dr. Lincoln was unanimously elected an active member of the Association.

On motion of Dr. Keating it was voted that Dr. Lincoln's paper should be the first printed for distribution.

The committee on organization reported the following names of persons who were afterwards duly elected by the president, casting one ballot for the whole, in accordance with a vote of the Association.

Report of Committee on Organization.

President, E. R. Johnstone; vice-president, A. H. Beaton; secretary and treasurer, Dr. A. C. Rogers; official reporter, Mrs. Isabel C. Barrows.

On motion of Dr. Keating the present able editor of the JOURNAL and his staff were re-elected.

Mr. Johnstone, the incoming president, was introduced, and expressed his thanks for the honor paid him.

Dr. Keating and Dr. Barr were appointed to audit the accounts of the treasurer.

On motion it was voted to continue the Committee on Etiology of which Dr. Fernald is chairman, with instructions to report next year.

Dr. Rogers explained the reason for the failure to report this year.

Mr. Johnstone said they found it extremely difficult to fill out the blanks when the parents come to the institution the first time; that he had been able to get satisfactory replies in only one case.

Dr. Carson said that it would be impossible from their present records to fill out the blanks. Dr. Fernald had explained to him that the idea was to have every superintendent fill these out with new admissions, but even then it seemed to him impracticable. He said that some of the questions were such that he should hesitate to put them to parents.

Dr. Rogers thought the information could be partially obtained at the time of admission, but it might be gained later as one became acquainted with the families and their confidence was more freely given.

The report of the treasurer and of the auditors was presented and the report ordered placed on file. Dr. Keating, one of the auditors, suggested that all members in arrears should be asked to settle their accounts with the treasurer.

Dr. Rogers asked the opinion of the Association as to an exhibit at the St. Louis Exposition; whether it should be a collective exhibit, or in what form it should be presented.

Dr. Carson moved that that be left with the secretary and president. Voted.

Dr. Keating moved that \$150.00 should be appropriated from the treasury

for the initial expenses of such an exhibition. Voted.

Dr. Rogers said that it would not require so much for preparatory work, but it would take several times that much for the whole exhibition.

Dr. Rogers: There are people whom this Association has honored in the past, but there are people who can bestow honors upon the Association. I therefore move that we may have the honor of making Dr. William T. Harris an honorary member of this Association. Unanimously carried by a rising vote.

Dr. Harris: I thank you. I esteem it really and truly an honor and hope I shall have the pleasure of attending your future meetings.

Adjourned at 3:15 P. M. to visit the school of Miss Mattie Gundry at Falls Church, Virginia.

TREASURER'S REPORT, 1902-1903.

Cash Dr.

Balance on hand May 23, 1902,.....	\$ 167.95
To Cash Dues, 1900,	5.00
" " " 1901,	25.00
" " " 1902,	105.00
" " " 1903,	5.00
" " Sale of Journals and Three Decen. Volumes.....	126.54
" " Advertising.....	68.00
	<hr/>
	\$ 502.49

Cash Cr.

1902

July 8, By Telegrams	\$ 1.36
" 9, " Stock and Envelopes for Journals.....	37.24
" 9, " Binding of September (1901) Journals ..	4.50
" 14, " Stenographic Work	37.50
" 14, " Postage on September Journals.....	1.18
" 31, " Charges on Stock.....	.65
Oct. 6, " Stock for Journals.	19.20
Nov. 21, " Postage on December Journals.....	2.29

1903

Jan. 23, " Binding Second Decennial Vols. (12) and December Journals.	14.10
Mar. 14, " Postage on December Journals.....	1.72
" 20, " Binding March-June Journals, 1902	4.50
Apr. 25, " Postage.....	3.25
" 25, " Telegrams.....	2.40
" 25, " Charges on Envelopes.....	.25
" 25, " Gould's Medical Dictionary.....	.92
" 25, " Stock and Envelopes.....	40.23
" 30, " Printing of Etiological Blanks.....	30.90
May 4, " Exchange on Checks.....	.50
" 4, " Postage on Programs.....	.70
" 4, " Printing of Journals (December 1901. March-June and September, 1902) and Programs.....	99.78
" 4, " Clerical Work.....	10.00
" 4, " Proof-reading, etc.....	15.00
	<hr/>
	\$ 328.17
Balance on hand.	174.32
	<hr/>
	\$ 502.49

SUMMARY

Cash Cr.

1902-1903

By Stock and Envelopes.....	\$ 96.67
" Printing Journals, etc.....	130.68
" Stenographic Work.....	37.50
" Binding Journals and Decennial Volumes.....	23.10
" Proofreading and Clerical Work.....	25.00
" Postage.....	9.14
" Telegrams.....	3.76
" Gould's Medical Dictionary.....	.92
" Freight, Express and Exchange.....	1.40
	<hr/>
	\$ 328.17
Balance on hand.....	174.32
	<hr/>
	\$ 502.49

Vouchers filed for all expenditures.

Bound Proceedings on hand:

Vol. I, fourteen copies.

Vol. II, eleven copies.

TO BE COLLECTED

Due on Journals.....	\$ 72.00
" " Proceedings.....	8.10
" " Advertisements.....	57.00
Total.....	<hr/>
	\$ 137.10

Respectfully submitted,

A. C. ROGERS, Treasurer



The corner-stone of "Logan Hall" was laid this morning at 10:30 at the "Beverley Farm" Home and School for Nervous and Backward Children at Godfrey, Ill., in the presence of a large number of friends from St. Louis, Jerseyville, Alton and surrounding country. After the ceremonies lunch was served on the spacious lawn under the wide-spreading maples. The services were held in conjunction with a meeting of the Alton Horticultural Society, of which Dr. Smith is a vice-president, and were opened by an invocation by the Rev. John Allworth followed by the singing of America, after which Dr. Smith, the superintendent, gave a brief history of the work in this country and of the hopes and aims of the "Beverley Farm" School.

The new "Logan Hall" is of brick construction with rock faced brick trimmings laid in red mortar and is 40x60 ft., two stories high with three gabled chambers occupying the third floor. The first floor will contain bed rooms for eighteen children under ten years of age while the second floor will be devoted to gymnasium and school room purposes. This addition increases the capacity of "Beverley Farm" to fifty children and will greatly add

to the equipment necessary to the best development of these mentally deficient children upon whom the requirements of a normal education impose too great a burden.





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